NEW REMEDIES.

THERAPEUTICS.

THE EFFECTS OF GLYCERINE IN MODIFYING THE ACTION OF ASTRINGENTS.

Mr. E. B. Shuttleworth (*Canadian Pharm. Jour.*) says: "There have have been few additions to the materia medica which, in so short a time, have attained a more universal popularity, have been applied to as manifold uses, or been more generally extolled than glycerine. Its power as a solvent, equalling if not exceeding that of alcohol, has opened up a wide field of usefulness, which has generally been entered upon with great advantage. It may be, however, quite possible, and even probable, that a property of such ready adaptability, and of so wide a range, has been too generally made use of; sometimes under circumstances in which its effects may have proved the reverse of beneficial. Of such a character is the indiscriminate employment of glycerine in the preparation of tinctures or fluid extracts of vegetable substances of complex composition, when, though a presentable and permanent compound may be obtained, inert, or, perhaps, injurious agents, which would have been much better undisturbed, are dissolved and retained in solution.

"It is not, however, to this modifying action that I would at present call attention, but to an effect depending on another cause. Physicians who have been in the habit of using astringents—as tannic acid, and some of the preparations of iron—have noticed that when these substances are mixed with glycerine, a different, and much milder

effect is realized than when an aqueous solution is employed. During the last few months some of the pharmaceutical journals have alluded to this effect;* and at the last meeting of the British Pharmaceutical Conference it was made the subject of a short discussion.† It was then stated by the president that he was aware of an instance in which three hundred grains of perchloride of iron, dissolved in glycerine, was swallowed by mistake, and without any ill effects. It is certain that a much smaller quantity, in aqueous solution, would have produced serious results. The common experience of physicians with regard to the comparative inefficiency of *glycerinum acidi tannici* was also alluded to. Again, at a meeting of the Pharmaceutical Society, held Dec. 3d,‡ it was stated as a well-known fact, that, if a greatly astringent effect is desired, the solution of tannin in glycerine must be diluted with water; and that the same is true in regard to the styptic action of a solution of perchloride of iron in glycerine. It was also stated that *glycerinum acidi carbolici* was much milder in action than an aqueous solution of similar strength. At the last meeting of the American Pharmaceutical Association the effect of glycerine on astringents was alluded to as having been noticed; as all these statements coincide with the opinions of observant physicians, this modifying action of glycerine may be recognized as an acknowledged fact.

"It becomes interesting for us to ascertain the cause of this modifying action; and, in this endeavor, we may consider, first: the nature of the physiological and therapeutical effects produced by astringents; and, secondly, the effect of glycerine on the chemical properties of this class of remedies.

"In regard to the first point, we find that the action of astringents is, in great part, if not entirely, to be attributed to their chemical agency. In most instances, these bodies have an affinity for certain constituents of the animal solids and fluids, and effect changes by direct combination. Pharmacologists are generally agreed on this matter, and it is thought that, whether applied externally or taken internally, these remedies have a more or less local action, producing astriction or corrugation of the tissues, or coagulation of the fluids. In regard to tannic acid,§ Pereira says, 'Tannin acts on the animal tissues by virtue of its affinity for their constituents. It forms, with albumen and gelatine, compounds which are insoluble in water, and it also combines with fibrine; when taken into the stomach it unites with the constitu-

* Glycerine: by A. H. Mason, F.C.S., Chemist and Druggist, April, 1873, p. 119; and Can. Pharm. Jour., No. lxii. p. 396.

† Pharm. Jour. and Trans., Oct., 1873, and Can. Pharm. Jour., vol. vii. p. 172.

‡ Pharm. Jour. and Trans., Dec., 1873, p. 451.

§ Elements of Materia Medica and Therapeutics, vol. i. p. 98.

ents of the epithelium, and of the mucous membrane of the alimentary canal.' It may therefore be assumed that astringents are, in general, merely chemical agents, and if their anticipated effect is to be realized, their chemical composition must not be modified or disturbed.

"In order to determine the chemical action of glycerine on astringents, I have commenced a series of experiments, which has, so far, only been completed so as to afford indications of a definite and satisfactory conclusion. The substance chosen as best representing the class of vegetable astringents is gallo-tannic acid—the tannin of commerce; the mineral astringents may be aptly represented by the perchloride and persulphate of iron.

"The effect of reagents on an aqueous solution of the *glycerinum acidi tannici* is precisely similar to that produced on a simple aqueous solution of tannin. The salts of iron, tartrate of potash and antimony, chloride of sodium, sulphuric and hydrochloric acids, and gelatine, give, in both cases, colorations and precipitates alike in appearance. In order to ascertain the comparative power of the two solutions in precipitating gelatine, solutions equal in tannin strength were prepared, and it was found that an equal number of measures of the same solution of gelatine were required for precipitation.

"Being unable to detect any difference in the behavior of these aqueous solutions, a solution of tannin in glycerine, undiluted, was treated with solution of gelatine, and it was found that the tannin was *not precipitated;* or, at least, that only a small portion of the glycerine solution which was in immediate contact with the water contained in the solution of gelatine was so affected. This superficial layer of coagulum was, on the application of gentle heat, immediately dissolved. This result is, so far, satisfactory, and affords a possible explanation of the fact before alluded to—that, in order to realize the full astringent effect of the glycerine preparation of tannin, dilution with water is necessary.

"I have not had time to pursue this subject further, or to examine into the effect noted by some observers, that glycerine prevents the precipitation of some of the salts of iron by alkalies.

"Speculating on this subject, and bringing to our aid those facts relating to the properties and affinities of glycerine which are already known, we find that this substance is by no means chemically inert, nor indeed so sufficiently, as to admit of a general application as a solvent. The range of glycerine compounds is not at all a limited one, but quite extensive, comprising salts, many of which are well defined, and which possess strong individual characteristics and properties. Of these are the simple compounds of glycerine and the organic and

inorganic acids, or the more characteristic glycerides or glyceral ethers. I would hazard the suggestion, that where glycerine and tannic acid are left in contact for a considerable time, or where heat is applied, as in the pharmacopœial process, that a glycero-tannic acid or ether is formed. The distinguishing termination *ine*, applied to ethers of this kind, would not in this case be appropriate."

PRECAUTIONS DURING ANÆSTHESIA.

The following extracts are from a note appended to a letter addressed to the *Brit. Med. Journal*, by Dr. Bigelow of Boston:

Under these circumstances, a few practical suggestions in a familiar form, however superfluous or even trite to a part of the surgical world, may perhaps not inappropriately serve as a record of the current views and practice of etherization in the hospital with which I am connected,—which has, perhaps, a larger experience than any other, of this form of anæsthesia.

1. Accept the odor and bulk of ether as a cheap compromise for the safety of the patient and the confidence it gives the operator.

2. Believe that the anæsthetic effects, whether pleasant or objectionable, do not differ materially from those of chloroform.

3. Recognize the fact, that, while chloroform may kill without warning, ether never does.

4. Aim at anæsthesia by inebriation, not by asphyxia. With ether vapor, insure air to the patient. Though he struggle at the beginning, if he is not rigid or too livid, it is safe to compel inhalation; but if you can devote more time to the process, the resistance will be often less.

(Before etherizing, remove false teeth, and loosen a tight dress.)

5. Use, and let hospital attendants use, a good-sized bell-shaped sponge; and then it may be a question of less rather than more air. The various forms of apparatus which restrict or graduate the quantity of air require more attention and more assistance. Of these a close bag is the worst. If the sponge is damp, it retains ether better, while the vapor is perhaps a little softer than when absolutely pure. The ready ignition of the latter suggests the precaution of moistening with water the skin and saturated linen, before employing near the face even galvano-cautery.

(The gravitation of the vapor makes it practically safe by night, if lamps are held above it.)

Keep the pulse in hand; at any rate, examine it often. When the pulse is right, the patient is so. With chloroform, the pulse may be

right and the patient wrong. If slow or feeble,* or if the patient snores more than he need, save his strength by giving air,—at any rate, until the pulse comes up; but renew the ether before he is sensible of pain. If the pulse shows that he is suddenly faint, lay him down and give him air. Faintness not unfrequently results from nausea, and is relieved by vomiting. In a case of doubtful pulse, a contractile pupil reasures the operator; a dilated pupil renders him more cautious.

7. If the patient is livid and rigid, give him air.

8. If his glottis contracts, give him air.

9. If he breathes badly, put the finger inside the cheek to admit air over the base of the tongue.

10. Should he vomit, of which there is usually timely notice, give the matter free exit by turning the patient, if recumbent, well to one side. Although there is less nausea with an empty stomach, it is not well to starve a patient about to encounter a protracted operation.

11. From time to time evacuate the tracheal mucus from the fauces, during an expiration, with a sponge held in dressing forceps.

12. In operations about the nose and mouth, give for convenience a powerful dose before beginning. Impregnate the whole circulation to the degree it usually attains in the middle of a long operation. The patient is then easily kept quiet. Otherwise a volume of fresh blood may find its way to the brain, and suddenly revive him. Let the repeated dose be also heavy.

13. In these operations, expect blood in the trachea, and evacuate it like the mucus,—but, by reason of its quantity, more promptly.

14. Indeed, if such an operation promises much blood, have a tracheotomy tube ready, with hooks to hold the incision open while they compress the veins, so that the tube can be entered by a cut or two in a few seconds.

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* "Here is the precaution against danger; . . . . this sign is *the diminution of the force and frequency of the pulse.*

"In an early case of the administration of ether by Dr. Morton, and which has been reported, the danger from over-narcotism was quite as imminent as in any case I have since seen alluded to. As a by-stander on that occasion, I casually felt the pulse, and found it barely distinguishable; and though it subsequently still decreased, the means at once adopted for the restoration of the patient proved ultimately successful. This occurrence pointed to the pulse as an index of the stage of narcotism; a few subsequent experiments confirmed the belief; and I have not since hesitated to push etherization to complete insensibility, and to continue it, if necessary, during a length of time, provided the pulse remained full and strong. If it be retarded by ether, it is curious to observe with what certainty it recovers force and frequency, after a few inspirations of pure air. It will be inferred from these remarks that the pulse is to be carefully examined during the whole anæsthetic process, and that inhalation is to be temporarily discontinued at its indication."—*Anæsthetic Agents, etc.*, 1848.

15. Or insert the tube before operation, and put a sponge in the pharynx. The patient may then be etherized through the tube. I have had occasion to resort to these expedients.

16. In artificial respiration, act with the patient, and not against him. He will not cease to breathe at once, and wholly. Enjoin silence; watch the first attempt at inspiration, and at the expiration compress the thorax, aiding its elastic reaction, if absolutely necessary, by Silvester's, or other quiet method. See that the tongue is well forward.

17. Do not cool the patient by exposure and wet surroundings.

18. Being first assured that he can swallow a teaspoonful of water, feed him, if you like, with stimulus, during the expiration, but not the inspiration.

19. Give to all painful surgery, without exception, the benefit of anæsthesia; but a patient equivocally exhausted by long disease,—of the bladder, or of a joint, for example,—or an habitual inebriate, may require care; without which protracted narcotism may gradually depress his pulse beyond the rallying point. On the other hand, a healthy laborer, who reaches the hospital some hours after a railroad accident, cold, and literally pulseless at the wrist, from hemorrhage and exposure, is, as a rule, stimulated by the ether, during and after at least one amputation.

20. Notwithstanding every expedient, there is occasionally an untoward subject who is habitually tetanic and livid, whenever etherized; or, more rarely, one whose respiration is notably intermittent before he becomes insensible. The latter requires attention. In children, it may be added, anæsthesia is cumulative.

Such are some of the minor considerations and prompt precautions which collectively determine the question of life or death in the exceptional emergencies of anæsthesia by ether. Many of them apply with equal force to chloroform; but against the shock of chloroform and its sequences, whether "chloroformic syncope," "cerebral anæmia," or "cerebral congestion," precaution avails nothing.—*The Clinic.*

EUCALYPTUS GLOBULUS: ITS USE IN THERAPEUTICS AND ITS VALUE AS A FEVER-DESTROYER.

The therapeutic value and uses of the *Eucalyptus globulus* are thus described by Dr. S. Ringer in the *London Medical Record:*

In March, 1870, M. Cloez announced that *Eucalyptus globulus* consists of chlorophyl, cellulose essential oil (eucalyptol), resin, tannin, lime, and alkaline salts. M. Debray (*De l'Eucalyptus Globulus*, Paris, 1872) and M. Rabuteau (*Communication à l'Académie des Sciences,*

November, 1872) confirm these researches. Eucalyptol, a liquid camphor, $C_{24}H_{20}O_2$, possesses almost all the active properties of the plant, which does not contain an alkaloid. When applied to mucous membranes, eucalyptol excites congestion according to the strength of the application. A few drops produce a sensation of coldness in the mouth, whilst one or two grammes (15.5 to 31 grains) excite disagreeable warmth in the mouth, and pain in the stomach and intestines. A small dose promotes appetite, a large one destroys it.

Gimbert employs small quantities of the essential oil, on account of its antiseptic and stimulant properties, in tooth-powders, gargles, eye-washes, and applications to wounds, especially unhealthy wounds. It can be given in capsules; and, by administering it with food, we avoid irritation of the œsophagus or stomach.

A moderate dose of eucalyptol, ten to twenty drops, at first accelerates the pulse, produces general excitement, shown by irresistible desire for moving about, and a feeling of buoyancy, increased appetite, strength, and sexual appetite. It is an intoxicating medicine, but, unlike opium or a large dose of alcohol, these effects are not followed by brutishness and torpor, but produces a general calmness and soothing sleep. Intoxication is not constant; often it only stimulates. M. Gubler says this excitement may amount to fever; and Gimbert believes that he has produced fever in a dog by subcutaneous injection. M. A. Sicard suffered from a severe attack of migraine after inhaling eucalyptol. In one case it produced cerebral congestion, with much excitement, and in another painful palpitation of the heart. This essential oil, however, rarely provokes these symptoms, and in strong men only after ten or twelve drops, while five to six drops may produce them in nervous persons.

It affects animals as man. They become active, and their senses are made more acute. Excitement is followed by tranquillity and lethargy. Arterial tension is diminished; the temperature falls. Circulation is stimulated by the action of the remedy on the sympathetic. Even moderate doses, if continued for some time, produce an asthenic state. The temperature falls a degree to a degree and a half below natural. The pulse becomes less frequent, and may fall to fifty beats per minute. The senses (and the muscular sense) are blunted. The functions of the brain are unaffected, there is no stupor, and the size of the pupil is unaltered. The reflex functions of the cord are depressed. These symptoms, rare in young and vigorous people, but more easily produced in old persons, may excite alarm, but are without seriousness, and are removed by a cup of coffee. Eucalyptus, when fatal, kills by destroying the excito-motor functions of the cord; the temperature also falls considerably. An old man with vesical catarrh took, by mistake,

eighty drops of eucalyptol, which produced feeling of internal heat and paralysis of the extremities. He had only an objective consciousness of his extremities, and when he shut his eyes he was unaware of their existence. When he wished to move his arms or legs they obeyed him imperfectly, the movements being feeble and disorderly. The sphincters retained their tonicity. A cup of coffee removed these symptoms.

Gimbert says there is a close resemblance between eucalyptol and bromide of potassium. He thinks the decline of the temperature important, and that it will guide us in the employment of this remedy, for in poisoning it falls rapidly; and hence the thermometer must be employed when we administer this medicine to produce its sedative effects, as in scarlet fever, tetanus, or other acute illness. Dangerous results may be averted by a few cups of coffee.

As in some doses it stimulates the sympathetic and promotes capillary circulation, he recommends it in congestions and paralysis of the capillaries. It will disperse many cerebral and pulmonary congestions, but whilst serviceable in chronic bronchitis, it over-stimulates in acute. Piles sometimes disappear during its administration, perhaps from the local effects, but most likely from its effects on the pelvic sympathetic. In large doses the stimulating effects of this essential oil are slight, and it soon produces asthenia and then paralysis.

Eucalyptol is absorbed by the stomach and lungs. It is eliminated by the lungs (for the breath smells of it even after an anal injection), the kidneys, and skin. In its passage through the lungs it contracts the capillaries, promotes circulation, and hence deepens respiration, and thus in lung-complaints it removes congestion. Elimination may excite irritation of the bronchial tubes (shown by increased cough and hæmoptysis if there be tubercle) if it be administered in too large doses or in unsuitable cases. Gimbert is doubtful concerning its usefulness in checking hæmoptysis; he thinks it may be good where the capillaries only are ruptured, but in hæmoptysis due to softened tubercle he considers it highly dangerous.

It is eliminated by the kidneys in an oxidized form, and makes the urine smell of violets; the powder and tincture, however, produce a herbaceous smell, or leave the smell unaffected. Gubler believes it is chiefly eliminated by the lungs. It greatly increases the elimination of urea: thus, Gimbert usually passes twenty grammes in the twenty-four hours, but under the influence of this medicine he voided forty grammes in the same time. The urine is yellow and clear after eucalyptol, but red after the powder. The essential oil escapes through the skin, rendering the sweat odorous and sometimes producing eruptions. Gimbert gives the following conclusions. It is an antiseptic,

by preventing decomposition of organic substances, and particularly of blood. It is a powerful general stimulant, through its primary action on the nervous centres and sympathetic, thereby quickening the capillary circulation. Through its influence on the nervous system, it is antispasmodic. By diminishing the excito-motor activity of the cord, by lessening animal combustion, the frequency of the respiration, and the circulation, it becomes a febrifuge and sedative.—*Phil. Med. Times.*

Eucalyptus Globulus a Preventive against Miasmatic Diseases.—In a lecture before the Académie in Paris, M. Gimbert made the following interesting statement in regard to the eucalyptus globulus. Speaking of the plantations which were made of these trees at the Cape of Good Hope, he says: "Within two or three years they completely changed the climatic condition of the unhealthy parts of the colony. At Pondook," he says, "in Algeria, a farm situated on the banks of Hamyze was noted for its extremely pestilential air. In the spring of 1867 about 13,000 eucalyptus trees were planted there. In July of the same year, the time when the fever season usually sets in, not a single case occurred; yet the trees were not more than nine feet high. Since then complete immunity from fever has been maintained. At the factory of the Gué de Constantine, in three years, a plantation of eucalyptus has transformed twelve acres of marshy soil into a magnificent park, whence fever has entirely disappeared.

"In the island of Cuba, ague and all other paludean diseases are fast disappearing from the unhealthy districts where this tree has been introduced. A station-house at one end of the railway viaduct, in the department of Var, was so pestilential that the officials could not be kept there longer than a year; forty of these trees were planted, and it is now as healthy as any other place on the line."—*The Garden.*

THE NATURE, ACTION, AND INDICATION FOR THE USE OF CROTON-CHLORAL HYDRATE.

Professor Oscar Liebreich, writing upon this subject, says: "When chlorine gas acts on aldehyde, croton-chloral is formed, as has been demonstrated by Dr. Kramer and Dr. Tinner. In order to avoid a mistake which is apt to be caused by the name, I must here remark that this body possesses no relation whatever to croton-oil, although its chemical constitution proves it to be the chlorated aldehyde of crotonic acid. Croton-chloral differs in its outward appearance from hydrate of chloral, differs widely from the latter with regard to its physiological effects. Four *grammes*, or a drachm, of this substance,

dissolved in water, and introduced into the stomach, produce in the course of fifteen to twenty minutes a deep sleep, accompanied by anæsthesia of the head. Whilst the eyeball has lost its irritability, and the nervus trigeminus shows no reaction whatever on being irritated, the tone of the muscles remains unaltered.

I have experimented with this remedy on maniacs during an attack of mania. They remained quietly sitting on their chairs in a deep sleep, their pulse and respiration being unchanged for two whole hours together. If anæsthesis had reached so high a degree in consequence of the application of hydrate of chloral, the patients would have dropped from their chairs, and both their pulse and respiration would have been considerably retarded. I have seen croton-chloral acting in the same way on healthy individuals. In some cases of tic-douloureux, the remarkable phenomenon is exhibited that pain ceases before sleep sets in. I am sorry to say, however, that this remedy acts only as a palliative in this dreadful disease. I nevertheless prefer its action to that of morphia, because it has effects as good as the latter remedy, without being so detrimental to the constitution in general. I have never observed any unfavorable effects of croton-chloral on the stomach or any other organ, although I have made frequent experiments with it.

The indications for the use of this remedy are to be found—1. In cases where hydrate of chloral is inapplicable on account of heart-disease; 2. In cases of neuralgia in the district of the nervus trigeminus; 3. In cases where very large doses of chloral are necessary to produce sleep. I there recommend the addition of croton-chloral to hydrate of chloral.—*British Med. Journal*, Dec. 20.

The beneficial effects of the drug may be obtained by the administration of one or two grains every half hour or hour, as occasion may require.

IMPORTANCE OF GELATIN IN NUTRITION.

Voit, Bischoff, and Fr. Hofman ascertained, by a series of experiments on dogs, that the addition of gelatin to the food always reduces the consumption of albumen. This effect is observed when large as well as when small quantities of meat are fed at the same time with the gelatin. Particularly when meat is given sparingly, gelatin serves to economize albumen to a much greater degree than fats and carbohydrates. The amount of albumen which is thus saved is in proportion to the amount of gelatin given. Still, an appreciable quantity of albumen is constantly consumed, even when a large excess of fat is

added. Fat and gelatin together decrease the consumption of albumen more than gelatin alone.

Gelatin is quickly decomposed after being absorbed in the alimentary tract. The experiments demonstrated that a deposit of gelatin in any one of the organs is not possible. Gelatin can therefore substitute only a portion of the requisite albumen, and not all of it. Gelatin cannot even take the place of the tissues producing it, since these originate from albuminous substances.

Voit has explained at some length his conception of the differences between the two varieties of albumen found in the human body, which he distinguishes as organic and circulating albumen. The former is a constituent of the tissues, and is decomposed with difficulty, while the latter occurs in the circulating fluid, and is readily converted. The fact that neither gelatin, nor fats and carbo-hydrates, are able to prevent the conversion of albumen completely, is most readily explained by their inability to replace organic albumen, and to form organs and tissues. No new blood-corpuscles to take the place of those which have been destroyed, no new muscular fibre, nor even a tissue producing gelatin, can be formed from gelatin itself. But when gelatin alone is given, a smaller amount of the organic albumen is transformed into circulating, or albuminose, so that the organism loses less albumen than it would otherwise do.

When gelatin is administered in conjunction with a little albumen, the consumption of organic albumen is very much reduced. Gelatin with an excess of albumen increases the amount of organic albumen in the tissues. Gelatin is subject to conversion, in a manner similar to albuminose, and saves albumen on account of being more readily decomposed than organic albumen.

As gelatin cannot substitute organic albumen, but only limits the conversion of the latter into albuminose, in place of which it is itself decomposed, an animal cannot be supported on it for any length of time, from want of albumen, even when fats, carbo-hydrates, and salts are given in sufficient amounts. Gelatin is, consequently, not properly a nutrient; but still it serves the purposes of nutrition in an indirect manner. It differs from other alimentary bodies in not being able to substitute any one of these completely, while fat and carbo-hydrates can entirely prevent the waste of fat, and while each inorganic constituent has the property of substituting itself.

Gelatin is not a plastic aliment in the old acceptation of the term, as it takes no part in the elaboration of the tissues. Even as a respiratory element it is of very slight importance, no more, in fact, than was formerly accredited to albumen. But on account of the facility with which it is decomposed in the body, it serves a useful purpose in

economizing both albuminose and albumen. Its action in this respect is similar to that of fats and carbo-hydrates, but its effects are much more marked. In addition, gelatin was found to prevent the destruction of a small amount of fat.—*Zeitschrift für Biologie*, 8th vol., 3d No.—*Chem. Techn. Mittheilungen von Elsner. Industrieblätter von Hager u. Jacobsen.*

BROMIDE OF POTASSIUM.

This article, which has come into general use as a nervous sedative and hypnotic, is too little known for its general properties and effects to be consistent with sound and judicious medical practice. The subjoined facts are a translation of Dr. Voisin's prize essay on this salt, published recently in the *Archives Générales de Médecine.*

The following points are noted:

1. The great necessity of administering it in a pure state.

2. The best mode of administering it is to give it in sweetened water at the commencement of a meal. Care should be taken of the teeth, as bromine is eliminated by the buccal mucous membrane.

3. We should watch the action, as bromism can supervene in two different fashions—the slow and the rapid forms.

The slow form announces itself by a deathly white color of the skin, especially of the face; by hebetude, stupidity, dryness of the mouth, its mucus becoming pasty, by diarrhœa, considerable meagreness, titubation, profound sleep, a sort of coma, by difficulty of speaking and finding words, by bronchial catarrh which may become suffocating. Bromism comes on rapidly in those who take little exercise. It may be produced in a few days, in patients confined to their beds, by daily doses of twenty to thirty grains. External temperature does not seem to exert the least influence on the genesis of it. Bromism appears in many patients who for many months or years have taken from sixty to one hundred and fifty grains, without any assignable reason why it should occur at that moment rather than any other.

The brisk, rapid form presents itself in the following way: In patients who have taken the remedy from three to four years in doses of ninety to one hundred and fifty grains, titubation, considerable difficulty in walking, impossibility of expressing ideas, drooping of the eyelids, somnolence, pain in the head, diarrhœa, stupidity, trembling or badly traced writing, the words being nearly incomprehensible, from portions being omitted. At the end of some hours the tongue appears red, dry and broad, and the patient is very thirsty.

The treatment of bromism consists in the imperative disuse of the

medicine, vapor-baths, black coffee, purgatives, diuretics, and a very nourishing liquid alimentation.

4. A good sign to determine if the dose is large enough is the absence of reflex nausea caused by introducing a spoon down to the base of the tongue. Iron and arsenic should be frequently associated with this medicine to prevent the anæmia and cachexia produced by it.

5. Duration of treatment. As relapse in epilepsy may occur six years after apparent cure, this author considers that in this disease the length of treatment should be at least ten years; although admitting that he exposes himself to error in this respect.

6. Accidents which may result from the use of this medicine:—Bromism has already been noted. Bromic cachexia. This is characterized by considerable decolorization of the skin, blowing vascular murmurs, languor in the movements and expression, general debility and emaciation. This writer believes that every patient who takes bromide of potassium, in doses exceeding seventy-five grains daily, should be examined by his physician every five days. He considers it a dangerous habit for pharmaceutists to deliver the remedy on a recipe already served. In women who take sixty to ninety grains of the bromide, a dry cough, with difficult inspiration, supervenes, especially in the evening or during repose. The cough resembles whooping-cough. This medicine produces also cutaneous eruptions.

7. Elimination. Elimination by the kidneys does not seem to be greater in infants than in adults. The alimentary canal eliminates little or nothing. The amount excreted by the skin and through the saliva has not been determined. The present facts do not explain the remarkable tolerance of this remedy in infants compared with adults.

8. Therapeutic value. The two most important points in the treatment of epilepsy are the exhibition of it in a proper dose and a continuance of it for long periods. It acts in two different ways, physiologically speaking; one a sedative action on the medulla oblongata and the spinal cord; the other a constrictive action of the muscular fibres of the capillaries, making the tissues anæmic. The first explains its efficacy in those diseases where the cord and medulla are excited, as in epilepsy, chorea, simple and traumatic tetanus, spinal irritability of hysterical and anæmic patients, etc. Its happy results in spermatorrhœa are due to its capillary constriction. By the same, buccal, pharyngeal, vaginal, and probably stomachal secretions are diminished. He relates ninety-six epilepic cases treated, twenty of which have not exhibited any further morbid phenomena.—*Med. and Surg. Reporter.*

Means of Arresting Vomiting Caused by the Cough of Phthisis.—The anæsthetic action of bromide of potassium to the phar-

ynx has been utilized by the surgeons in delicate operations in this region, as staphylorraphy. One of our Lyonese confrères, Dr. A. Bonnet, advised this agent to combat the cough in phthisis, and more especially the vomiting provoked by cough.

The simple means advised by Dr. Woillez consists in painting the pharynx with a pencil dipped in a concentrated solution of the bromide of potassium. We can approve of this method, and of the happy results obtained by the physician at the Laraboisière.

A morsel of charpie saturated in a solution composed of one-third pure bromide of potassium and two-thirds water is passed rapidly over the pharynx before breakfast in the morning, and at evening, and the patient is directed to refrain from coughing as long as possible.

This application checked vomiting immediately on the first application in four patients. In other cases, its action was less immediate, but still favorable. This remarkable result follows from all cases; in nine patients who vomited habitually after meals, fifty-two applications were made and seven times only did vomiting ensue after treatment was commenced, if the operation had been repeated immediately after taking food.

It is probable that the employment of these pharyngeal applications with the bromide of potassium may render service in other cases, as in the emesis of inanition, pregnancy, etc. In all cases it has the advantage of simplicity, facility of application, and freedom from any inconvenience.—*Lyon Médicale*, Nov. 23, 1873.

Obstinate Vomiting of Pregnancy Cured by Enemata of Bromide of Potassium.—Dr. Girabetti has successfully treated the obstinate vomiting of pregnancy by enemata of bromide of potassium given in increasing doses; commencing with 6 grammes (about 92 grains) the first day, 8 grammes the second, and 10 grammes the third; after which the dose is lessened in proportion to the effect produced. In one case the vomitings were arrested by this treatment in three days.—*La Tribune Médical*, 23d Nov. 1873, from *Rev. Méd.*

THE NITRITE OF AMYL IN EPILEPSY.

Dr. Crichton Browne has contributed to the last volume of "West Riding Lunatic Asylum Medical Reports" a paper in which he describes his experience in the use of nitrite of amyl in epilepsy. The results at which he has arrived are mentioned in the *Medical Press and Circular*:—

Being engaged in tracing out the areas of blushing as induced by nitrite of amyl in different individuals and under different circumstan-

ces, with a view to elucidate the laws regulating the diffusion of that form of emotional expression, Dr. Crichton Browne was struck by the fact that the degree and extent to which the blushing caused by nitrite of amyl is manifested are influenced by certain pathological states. He found that general paralytic patients may inhale a considerable amount without displaying any marked flushing, even of the face, and that epileptics cannot breathe the smallest quantity without exhibiting extreme cutaneous hyperæmia over the face, neck, and chest. Guided by these observations and by an ingenious argument founded upon them, he was led to conclude that if the nitrite of amyl could be given immediately before an epileptic fit, the spasm of vessels might be prevented, and so the whole sequence of morbid events averted. "And," as he forcibly remarks, "a fit averted in epilepsy is no slight gain; it is, in fact, a step made towards recovery, and a postponement of those degenerative consequences which are, as a rule, developed in proportion to the frequency and severity of the fits. To interrupt a pathological habit is to give a chance of recovery; to control the fits is to limit the destructiveness of epilepsy." In several cases in which the nitrite of amyl was administered immediately after an aura the usual fit did not supervene, and in one case in which it was administered regularly three times a day, a series of fits from which the patient was suffering was abruptly interrupted. In rabbits, too, rendered artificially epileptic by Professor Ferrier, it was noted that the fit which invariably followed on electrical irritation applied to the exposed brain when no interference took place, was arrested by the inhalation of nitrite of amyl. "The result of all my experiments is to convince me," says Dr. Crichton Browne, "that it will be found invaluable in many cases in not only postponing but in altogether preventing epileptic seizures. The utility of an agent possessing this power can scarcely be exaggerated. It will, I believe, supersede other methods of attempting to avert the fit by acting upon indications afforded by the aura. Pressure upon, or ligature of a limb, section of a nerve trunk, or cauterization of the surface from which an aura originates, have done good service in certain cases, in hindering the accession of seizures, but the nitrite of amyl appears to be a more ready and certain means for compassing the same end. A vinaigrette or small stoppered bottle containing a sponge soaked in nitrite of amyl and carried in the pocket, so as to be at hand on the occurrence of an aura, will, I think, be found a safeguard to many sufferers from epilepsy. Whenever there is time after the initiation of the aura, and before the development of the proper phenomena of the fit, to breathe the nitrite of amyl freely, the fit, with its terrible accompaniments and disastrous sequelæ, may, in many instances, be not merely postponed but abolished."

But there is another epoch in epilepsy besides the pause between the aura and the fit, when, according to Dr. Crichton Browne's experience, the nitrite of amyl may prove beneficial, that is, at an advanced stage, when the alarming condition, the *status epilepticus*, is developed. In ten cases of the *status epilepticus* the nitrite of amyl has been used, and eight of these have terminated in recovery. Under its influence several patients have rallied from what was apparently a hopeless condition. Whenever it is inhaled the breathing becomes freer, the circulation is relieved, and the seizures are diminished in frequency and severity. It appears to act with a directness and certainty that cannot be ascribed to any other remedy hitherto employed in the *status epilepticus.—Medical and Surgical Reporter.*

Nitrite of Amyl in Spasmodic Asthma and Acute Bronchitis (*American Journal of Insanity*, October, 1873).—Dr. Daniel H. Kitchen has employed nitrite of amyl with great success in the paroxysmal cough and dyspnœa of acute bronchitis, and in the suffocative attacks of spasmodic asthma. He gives it by inhalation, in doses of from six to fifteen drops, poured into a small cup-sponge and applied immediately to the nose, the mouth being kept shut. He believes its beneficial effect to be due partly to its sedative action on the muscular system through the motor nerves, and partly to its power of diminishing blood-pressure and causing contraction of the capillaries. He details four cases, in all of which a variety of other remedies had been unsuccessfully tried, and in all of which nitrite of amyl gave prompt and entire relief.

Oxidized Ethereal Oil in Phthisis.—Last year attention was drawn to oxidized oils in phagedæna. Now it may be stated that Cheron (*Memorabilia*) has attained successes with inhalations of such oils in phthisis, while those devoid of oxygen, as turpentine, are useless. Camphor is the typical oil, but all oxidized ones can be used—ol. cedri and ol. laur. camph. are agreeable. The elastic fibres of the sputa diminished under the treatment, and finally disappeared. Pyrexia and rapid waste contra-indicate the treatment which is most adapted for slowly progressing phthisis with copious expectoration. It is said that the cough, expectoration, and dyspnœa diminish, the appetite and weight increase, and hectic disappears under this treatment. Other treatment can be employed at the same time.—*The Doctor.*

Belladonna Plaster in Obstinate Vomiting.—Dr. Guéneau de Mussy recommends, in obstinate vomiting, diachylon plaster and theriac plaster, of each two parts, and extract of belladonna one

part, the plaster being twelve centimetres in diameter. It may remain applied to the epigastrium for twelve or fifteen days without being renewed; and out of the thousands which he has employed the author has only met with one case in which an idiosyncrasy caused some ill effects to result. It is not meant to be asserted that this means always succeeds, but it has succeeded in a very great number of cases, either in entirely relieving vomiting or greatly mitigating it, some remarkable examples of which are alluded to in the paper. This success has encouraged Dr. Guéneau de Mussy to try the effect of the plaster as a prophylactic and curative in sea-sickness, and although as yet he has only tried it in four cases, he entertains great hopes of the benefit to be derived, and at all events thinks that so simple a remedy deserves further trial in so extremely painful an affection, which has hitherto resisted all measures of relief. The first of these four cases occurred in the person of a young married lady, who never could place foot on a vessel without being tortured with sea-sickness, and who always landed in a state of exhaustion and semi-syncope. Having to make a voyage to Australia, she was advised to try the belladonna plaster, and after having had some vomiting on the first day, she, when last heard of, had traversed the Red Sea without sickness and in good health. A Brazilian physician, who had made several visits to Europe, and every time had been tormented by repeated and obstinate vomiting, and suffered greatly from this, eagerly adopted the plaster, and although in his last voyage the passage was a very bad one, he only felt slight nausea. A great personage of the same country was also a constant victim of sea-sickness, but on the last occasion he made the passage without any attack, and was able to walk the deck, which he had never done on any of the other passages. On board the same vessel was a lady in whom sea-sickness had produced, if not alarming, yet very distressing symptoms. One of the plasters was applied, and in the course of a few hours the vomiting, which had been incessant, completely ceased, so that the patient was enabled to join the other passengers on deck.—*Medical and Surgical Reporter.*

CURE OF DYSENTERY.

In a work of Schneider's (*L'Independente*) on tropical dysentery, we find some important particulars relating to the cure of the disease. In the commencement of the disease he gives a decoction of tamarinds or solution of sulphate of magnesia, and when some evacuations of mucus have come away, he gives mucilaginous drinks, and some small doses of morphia. The abdomen is kept warm with pieces of woollen,

and irritating liniments are used, and on the recommendation of Copland, turpentine fomentations are much used. He also applies leeches near the anus and loins, and on the walls of the abdomen along the course of the colon. Abstraction of blood is indicated in plethoric individuals, in Europeans newly arrived, and when a synochal fever exists. Schneider uses clysters of decoction of starch with tincture of opium and acetate of lead, or in cases of bleeding, alum clysters (8,250 grammes of mucilaginous decoction). When the stools are yellowish, without any tenesmus, mucilaginous drinks containing sulphuric acid and quinine, or simaruba, are useful. The diet, which at first should be quite fluid, ought gradually to be more substantial, and a little wine may be given. Calomel is useful every two hours if there are green evacuations. Typhoid conditions require the use of chlorine water, and clysters of lime water containing creosote (a drop of the latter in thirty grammes of lime water). Liquid albumen mixed with water should be the sole medicine in this case. The proportion of the white of an egg to 260 grammes of water and a little salt will suffice. Fifteen or twenty drops of phosphoric acid are recommended in chronic dysentery.

The value of milk diet seems to be always coming before us, and many are the cases in which we constantly resort to it. Dr. Barret relates in the *Archives de Médecine Navale* his experience of milk in chronic dysentery among soldiers and sailors returning from China. He considers a milk diet superior to all other treatment in such cases. He says the milk must be pure, unmixed with water, as fresh as possible, and not boiled. Sufficient milk was given to a patient, but nothing else allowed to pass his lips. Diarrhœa, if it appear, lasts but a few days. No change of diet is to be made, and no medicine given. If the physician fears the persistence of the diarrhœa, a small quantity of bismuth may be prescribed. If the milk pass through the bowels undigested, pepsine will remedy the defect in the digestive process. After a time the fæces become solid, the patient thinks himself cured, and craves other food. This is the dangerous period, for too early relaxation of the diet may cause a relapse. White of eggs, rice, cream, and the lightest possible things are to be admitted grudgingly; and when the patient feels convalescent, and will endure the restrictions no longer, he is to return by the slowest degrees to his former diet.

We have found the various alkaline waters very greatly assist patients to endure an exclusive milk diet; and in returning to other food, there are many milky puddings that English cooks prepare, which render the change gradual.—*The Doctor.*

Gelseminum in the Treatment of Intermittent Fever.—Dr. James D. McGaughey, writing to the *Philadelphia Medical Times*, says: I have used it in intermittent fever to assist cinchona in overcoming those cases that resisted bark when used alone, and have been highly pleased with the success I have uniformly met with.

I will more particularly mention the *varieties* of intermittent fever in which I have found gelseminum most useful. Every physician who has had to deal with intermittent fever has met with cases of a regular paroxysmal form, quotidian, tertian, or otherwise, easily controlled by quinine; yet after a certain length of time the paroxysms return again and again, necessitating larger antiperiodic doses, until the alkaloid has become useful only in preventing for a short time the attack, having lost its curative powers altogether. In such cases gelseminum shows its antimalarial powers to a gratifying extent. If, after taking, as it were, a new start in the treatment of such a variety of intermittent fever, we attend to any congestion or inaction that may be lurking about the abdominal viscera, and combine quinine with gelseminum, and give them until the latter produces its physiological effects, the inveterate catenation of morbid action will be broken in upon without failure in almost every case, and there will be but little danger of relapse until the subsequent season. Of course it will fail to produce the desired effect in a small percentage of cases, as we claim no specifics in the regular practice.

The second variety is where, in the beginning of autumn, the malarial cases lose their regular paroxysmal form, and are characterized by irregular chills and sweats,—a partial paroxysm sometimes occurring in the morning or afternoon,—occasionally alternate fever and sweating during the night; loaded tongue; pains in the bones and joints all over the body; headache; anorexia; nausea; high-colored urine; occasional dysenteric symptoms; malaise, etc. If quinine has been used alone in these cases without any amelioration of symptoms, the vagary of malaria still holding its curious anomalous course, gelseminum, added to the treatment and pushed to considerable weakness of eyelids, will generally conquer the disease in a short time.

Its effects in one case that came under my observation during the past season seemed more magical than otherwise; though such an extravagant term is hardly allowable in sober medicine. I feel pretty well assured that if physicians will give gelseminum a fair trial in connection with quinine, in cases where quinine alone has failed to cure, they will meet with gratifying success; provided *they push the gelseminum until its physiological effects are produced.* I think it is of prime importance, *in all cases of malarial fever, to attend strictly to the condition of the abdominal viscera,*—to keep the eliminative

organs, bowels and kidneys, in a state of activity. It is to the neglect of such precautions that we are to attribute so many failures in administering quinine. I paid attention to this point in the treatment of about one hundred and twenty-five cases of intermittent fever which have come under my observation in the past two years, and I am fully convinced that if we ignore the condition of the abdominal viscera, and recklessly rely upon the antimalarial powers of quinine alone, or its accessories, the fame of cinchona as a "specific" will never be vindicated or realized.

Action of Certain Bitter Substances upon the Blood Pressure and upon the Circulation.—Dr. Kohler, of Halle (*London Lancet*, Jan., 1874), gives a summary of experiments designed to determine the physiological action of bitter substances upon the circulation and blood pressure. He found that when cetrarin, columbin, and some other bitter substances, were injected into the veins a diminution of the blood pressure, to the extent of from eight to twenty millimetres of mercury, was first observable in the arteries. This was followed by an increase of blood pressure to the extent of twelve to eighteen millimetres above the original tension. The cause of the diminution of pressure, which occurred even after section of the spinal cord, and of the pneumogastric nerve, is to be sought in the heart itself. But the cause of the increase, which did not take place after section of the spinal cord, must be looked for *outside* the heart. The augmentation of the blood pressure he thinks is attributable in the case of cetrarin and columbin to the excitation of the vaso-motor centre. The primary diminution probably results from the paralysis of the termination of the vagus in the heart. The frequency of the pulse, even when poisonous doses of the above-mentioned bitter substances had been given, remained unchanged up to a short period before death.

Prophylactic Treatment of Intermittent Fever by Iodine.—In the *Philadelphia Medical and Surgical Reporter* for January 3, 1874, Dr. James Y. Sheaver gives a brief article recommending the constant use, three times a day, of tincture iodine in doses ranging from one to ten drops, in proportion to the age and sex of the patient, for the prevention of a return of the chills, after they have been checked with sulph. quinine. Give in a tablespoonful of cold water, before meals. He has had remarkable and encouraging success in following this course with cases in a highly malarious region, at Sinking Springs, Berks County, Pa., in which all other antiperiodics had failed to keep off a return of the chills.

Treatment of Erysipelas.—A new method of treatment in erysipelas has been employed by Kaczorowsky, of which he states that not a single fatal case has occurred since its use in several of the hospitals of Posen. The affected part and surrounding portions of the skin are painted every three hours with a mixture of carbolic acid and turpentine (1:10) over which compresses of lead-lotion are applied; if the inflammation is extensive, the parts are covered by ice compresses, which are frequently changed. Adynamic tendencies are combated by Hungarian wine and camphor. At the inflamed portions the redness at first becomes more intense, and even vesiculation takes place; the epidermis, however, soon dries, first at the inflamed portions, later at the surrounding portions: the skin becomes "tanned." In the course of twenty-four, at most forty-eight hours, the disease is mastered. Temperature and pulse suddenly diminish. Relapses have never been observed with this treatment.—*N. Y. Medical Journal.*

Acetic Acid in Psoriasis (*New York Medical Journal*, January, 1874).—Dr. Buck, of Lübeck, says that by ordinary methods of treating psoriasis the eruption may be temporarily removed without difficulty, but no protection from relapses is afforded. He believes that in nearly all chronic cutaneous eruptions, and especially in psoriasis, an etiological treatment is impossible, and a permanent result is promised only by a consistent external treatment. He has obtained the best results from the use of acetic acid. After the epidermal growths have been softened and loosened by several warm baths and soap, the glistening scales are removed with a soft brush. At first a few points of the eruption are to be pencilled once a day, and this is to be repeated until the skin remains smooth and feels normal to the touch. There are never any scars left. The treatment lasts from four to six or eight weeks, and, properly carried out, is not followed by relapses.

Acetic Acid in Sykosis.—This troublesome affection is treated in the Canstatt Hospital by *acetic acid.* The beard is cut short, scabs are removed by poultices, the parts are for several days anointed with tar ointment, and the hairs plucked out, and then the acetic acid painted over the diseased surface. It is painful, but usually one application is enough.—*Med. & Surgical Reporter.*

Is Sulphur a Remedy for the Itch? is a question which, accepting both the popular verdict and the dictum of Mr. Erasmus Wilson, we had long since come to regard as settled. It now appears, however, that we were mistaken; for, according to Dr. Charles Roberts, one of the staff of St. George's Hospital, pure sulphur is perfectly

inert, and its beneficial action due solely to the accidental presence of sulphurous and possibly sulphuric acids in the sulphur employed. Dr. Roberts says sulphur has little right to the position which it holds in the estimation of some surgeons and dermatologists as a therapeutical remedy. Made into an ointment, it is an effectual cure for scabies, but its smell and appearance almost exclude its employment; and as its virtues are due to the sulphurous acid it contains, and the grease of which it is composed, the old sulphur ointment may be cast aside for more elegant and equally effective preparations.

External Use of Cocoa-Butter and Cold in Scarlatina.—Dr. George Bayles says, in the *New York Medical Journal*:—The extraction of heat by the application of cold is a recognized principle in practice, and the extraction of superfluous heat by the application of a heat-absorbing agent of any description, would not violate the principle. Through my friend, Dr. James R. Leaming, I have been made acquainted with the wonderful heat-absorbing properties of *theobroma* (cocoa-butter). I do not venture too much when I say that, for its refrigerant action in fevers of the major kind, it is an agent cognate to ice-water. Its application must be frequent and lavish all over the cutaneous surface. It is absorbed so rapidly that a considerable time is required to so modify the general surface heat that any of it will remain upon the skin, thereby showing (when that is accomplished) the skin to have become, for the time being, supersaturated. The effect upon the patient is agreeable beyond expression, and I hope to see it supersede all other forms of inunction. That tossing violence of unrest and distress is at once measurably decreased. The temptation to constant repetition of this inunction is only restrained by the salutary fear that the interior caloric is not diminished synchronously with that of the surface. That it should is more than desirable. This butter of cocoa has the rare advantage of being a nutrient. Its liberal absorption by the skin is equivalent to a fair share of food taken into the stomach, and normally assimilated. During the desquamative stage it far surpasses lard or oils, being neither so disagreeably unctuous nor offensive to the smell. Indeed the odor of the body after its use is positively agreeable. It always retains its massive form, ready to be laid aside like a piece of fragrant soap when, for the time being, no longer needed, and its application is, to the nurse, almost a pastime.

During the period of intensest febrile excitement, it is quite right to resort to a *coup-sur-coup* course, so to speak, with this agent, as heat must be withdrawn as rapidly as possible for the comfort and welfare of the patient. Once an hour is as often as I have ever applied it

though it might be used oftener with benefit in some cases, and once every three or four hours is the minimum frequency where it is needed at all. I see no reason why, for similar conditions in other diseases, this admirable, pleasantly-flavored, heat-absorbing agent may not be used with great advantage.

Cold to the head must not be overlooked. In a child it cannot be applied in the same direct and comparatively unguarded manner as can be done in the adult.

I have found it sufficient, and more than *tolerable* (being *positively agreeable*), to have pounded ice enclosed in a bladder, and either laid or suspended near the vertex. The air, for many inches around the ice-bag, will be several degrees cooler than the prevailing temperature of the apartment. This can be borne for an indefinite period of time, as it is not attended with the shock ordinarily produced by other more direct applications of intense cold. The shifting and changing so frequently required by other methods, to the great disturbance of the highly-excited or morbidly-conscious patient, are, by this method, quite done away with. On the small iron cots or cribs of the nursery, I have often hung the half-loaded ice-bag, within a few inches of the crown of the head, and induced thereby an undisturbed sleep for as much as an hour or more at a time. This refreshment has a value which we can all readily appreciate in the delirious or semi-delirious subject. Such practical matters relating to the management of the disease, in this stage of high vascular excitement and perturbation, may be more or less fully rehearsed at any subsequent period, calling for the resumption of measures similar to those adopted at the first. A relapse of the fever is as successfully treated by the means herein indicated as it is at the beginning, and for many reasons often the whole array of measures, such as are here suggested, are urgently demanded. For rapid reduction of abnormal temperature, I know of no better or more acceptable means.

Effect of Combining Carbonate of Ammonia with Iodide of Potassium.—Dr. Joseph P. McSweeney calls attention to the fact, first noticed by Sir James Paget, that carbonate of ammonia greatly increases the therapeutic action of iodide of potassium. He says that in his experience in the treatment of syphilis five grains of iodide of potassium combined with three of carbonate of ammonia are equal in effect to eight grains of the former by themselves.—*Br. Med. Jour.*, Jan. 10, 1874.

Water Diet in Fever.—We all remember how freely diluents have been employed in fever, and that not a few have preferred to

permit their patients to slake their thirst with cold water. Dr. Luton, of Rheims, has gone still further, for he declares that for the last four years he has treated typhoid by an absolute water diet. Nothing but good fresh filtered water, occasionally iced, is permitted to be taken. At first it is taken with avidity, then in moderation, at last with signs of satiety. Sometimes it is vomited at first, but is soon tolerated. At the beginning of the treatment the bowels may be a little relaxed, but they soon become moderate and less offensive; after a time constipation may ensue. The duration of Dr. Luton's treatment depends upon the progress of disease. Between four and five days of water exclusively may be required, if we treat of the fever as a whole, but three or four days suffice if we think only of the enteric element of the disease. A light alimentation may then be allowed. Milk unboiled may be mixed with the water and given by spoonfuls. If this be well supported for a time, broth and soup may follow. M. Luton says that under the treatment the mortality is very low, and he has met with no evil results, while serious complications, including visceral congestions and bed-sores, disappear as by enchantment. He indicated he would give an emetic, or aperient, at the outset, or quinine at a late period, or would employ cough medicines, etc., as occasion might arise. The patient must be kept in a state of the utmost cleanliness.

The theory offered is, that the rapid alteration of food, especially sugar and starch, in contact with diseased surfaces, gives rise to acrid matters that increase irritation. By withholding everything except water for a few days, such products no longer are formed, and even ferments persist for want of their food.—*The Doctor.*

Mercury as a Direct Cardiac Depressant.—Dr. Geo. Harly (*Brit. Med. Jour.*, Jan. 10) states that the injection of corrosive sublimate into the femoral vein of a dog, produced paralysis of the heart, beyond the power of a feeble galvanic current to excite it, long before the vermicular action of the intestines had ceased. Add this to its well-known power to dilate the arterioles, and so to increase the general and glandular capillary circulation, and we have abundant explanation of the power of mercury to break up a slight attack of cold, etc., attended by slight febrile excitement.

Administration of Arsenic to Phthisical Sufferers.—*L' Union Médicale* sums up Dr. Jaccoud's experience of the above as related in the recent publication of his clinical lectures. "Arsenic powerfully ameliorates the nutritive process in chronic pulmonary phthisis. It abates nervous excitement, and possesses a marked antifebrile action, which can combat efficaciously the evening intermittent attack. Dr.

Jaccoud exclusively prescribes granules of arsenious acid, containing one milligramme each of the substance (1–66 gr.). They are taken at the beginning of the two principal meals. Dr. Jaccoud begins with two granules daily, and every eight days the dose is increased, until it attains from eight to ten a day, which is the maximum dose. This maximum dose is kept on as long as there is no production of acute symptoms, with pseudo-continued fever."—*Lancet*, Nov. 29, 1873.

Treatment of Acute Rheumatism by means of Firm Dressing.—This mode of treatment, recommended by Scutin, and applied in three cases by Gottschalk in 1845, was forgotten, until again brought forward by Concato, and more recently by Heubner. It is the subject of a paper by W. Oehme in the *Archiv der Heilkunde*, whose observations have been made in *Wunderlich's Clinic*. The results of the applications of light bandages are: 1. That the pains cease very soon after their application; the application consisting of pasteboard, occasionally, in children and patients in delirium, with a plaster-of-Paris bandage superimposed. As a rule, indeed, the pains cease in from twelve to forty-eight hours, or at latest after seventy-two hours. 2. The febrile symptoms are materially diminished in violence and shortened in duration. In a series of ninety cases, whilst the average duration of the febrile symptoms in the cases treated without the firm dressing, and for the most part with digitalis, was 9.3 days in hospital (plus 4.6 days before admission), those treated with firm dressing had a duration of 6.1 days. A fall of temperature usually occurs after twenty-four or forty-eight hours after the application of the dressing. 3. The combination of the reduction of the pain and of the duration of the fever caused a shortening of the total duration of the disease, and hence acted prophylactically in preventing fixation of the joints. Lastly, the profuse sweats characteristic of the disease seem to be diminished.—*Archiv der Heilkunde*, 1873, xiv., p. 385.

Hypodermic Injections in the Treatment of Cholera.—(*Indian Medical Gazette*, November 1, 1873.)—Surgeon A. R. Hall believes that in the collapse of cholera the patient is not suffering from nervous exhaustion, but is being *suffocated* by spasmodic contraction of the muscular coats of the arteries, due to the same cause as the vomiting and purging,—a specific irritation of the medulla oblongata and sympathetic nerve. Proceeding on this theory, he has treated his last case of cholera by subcutaneous injections of chloral hydrate, which he asserts to be one of the most powerful cardiac sedatives we possess. The patient when first seen was in a state of collapse, had the regular choleraic voice, fingers blue and wrinkled, and pulse barely

perceptible at the wrist, although the heart was beating strongly; there were frequent vomiting and purging, cold skin and breath, shrunken eyes, and cramps in the legs; he had not passed urine for several hours. One scruple of chloral was given by the mouth, but was immediately rejected. Five grains of chloral in solution in fifty minims of water were then injected under the skin of the arm. His hands and feet soon became warmer, and his radial pulse more perceptible. In about two hours vomiting and purging increased, and his hands grew colder; two and a half grains additional were injected, and two hours later the same quantity again. In a short time the vomiting subsided, the temperature rose, and he passed a small quantity of highly albuminous urine. He steadily improved, was well fed for a few days, and made a rapid recovery. Three other cases treated similarly by another practitioner all resulted equally favorable.

A correspondent of *Le Progrès Médical*, November 22, advocates the hypodermic injection of sulphuric ether and other stimulants in adynamic cases, and mentions one in which the injection of from two to three grammes of pure ether was the means of bringing a patient through the algid stage of cholera after all other remedies had failed.

Alleged Cure of Leprosy.—The *Friend of India* reports that the Madras surgeon in medical charge of the penal settlement at Fort Blair believes he has made a valuable discovery in the cure of leprosy. He is of opinion that leprosy can be cured by the oil of the gurjun-tree. Every leper in the settlement is, it is stated, being cured fast of this loathsome disease. In no case has there been the slightest failure, and the disease has been arrested at every stage.—*Druggists' Circular.*

Treatment of Erysipelas by the Tinct. Verat. Vir. Co. Concent.—Dr. John W. Lane, writing to *The Medical Press and Circular*, relates several instances of very good success following the use of local applications of concentrated compound tincture of veratrum viride, as made by Keith of New York. The application was immediately followed by relief from the burning pain, and in no case in which the application was extended for one to three inches beyond the limit of the disease did the inflammation extend. In a few cases the remedy was administered internally, but with no perceptible effects different from those following its local application alone.

Abortive Action of Quinia.—Dr. William Goodell (*Trans. Penn. State Med. Society*, 1873), after a careful study of the subject, gives the following conclusions: (1) Quinia, by producing intermittent contractions of the womb, has in large doses occasionally brought

on an abortion in the very early months of gestation. (2) It should not on this account be withheld from pregnant ague patients; for other things being equal, an abortion is more likely to be induced by the visceral congestions and muscular succussions attending an attack of ague, than by the ocytocic property of the antiperiodic. (3) The uterine action of this drug is too slow and too uncertain to be relied upon in the emergencies of ante or post-partum hemorrhage; but, in decided doses, it will often prove of service in menorrhagic attacks. (4) Like ergot, it acts most efficiently after labor has begun, a dose of ten grains being usually followed in inertia by a prompt return of pains. (5) Apart from its tonic and antiseptic properties, quinine is *par excellence* the remedy for puerperal disorders. By lowering the high temperature generated both by accelerated molecular metamorphosis and by rapid chemical combinations, it retards the oxidation of the tissues, hinders the formation of fibrinous concretions, and hence prevents cardiac plugging. By contracting the walls of the womb it tends to keep the protective coagula of the uterine sinuses from becoming loose and soluble, and to inhibit putrid and purulent absorption. Both by constringing the coats of the capillary system of blood-vessels and by paralyzing the ameboid movement of the white blood corpuscles, it presents in puerperal fevers an obstacle to fibrinous exudation, and to the migration of the leucocytes into serous cavities.

Treatment of Inflamed Hæmorrhoids in Parturient Women.—A small piece of ice is to be placed in a little bag of rubber or gold-beater's skin, and applied to the tumor. The ice is to be replaced as fast as it melts. It is very rarely that at the end of an hour or two the pain is not very much diminished. The treatment may be continued for a part of the day and repeated the next, but care should be taken to envelop the bag with fine moist linen, so as to render the application less direct. It is also necessary, when about to discontinue the refrigeration, to let the ice melt completely, and permit the water to attain the temperature of the bed, to prevent a reaction which might reinduce pain.—*Gazette de Joulin* and *La France Médicale*, September, 1873.

Benzoic Acid in Diseases of the Bladder.—Benzoic acid and the benzoates have long been employed in this country to correct certain conditions of the urine, but our neighbors do not seem to have employed those agents much. On the 15th January, however, MM. Gosselin and Robin brought them before the Academy of Sciences, of Paris, as the best remedies for ammoniacal urine. In two such cases, a few doses of benzoic acid rendered the urine neutral. They consid-

ered that when patients were about to be subjected to operations, it is particularly desirable to remove the alkaline ammoniacal condition of the urine, and related experiments to show that ammoniacal urine might be absorbed from any solution of continuity in the bladder, or urethra, and that such absorption is dangerous.

M. Wurtz informed the Academy, what is familiar to most of us in this country, that benzoic acid changes in the economy into hippuric acid, and this change explains the effect of the remedy on the alkalinity.

M. Pasteur was present, and could not let the subject pass without a word for ferments, which he sees everywhere. He said the condition of the urine depended on an ammoniacal ferment, which had been studied by Van Tieghem. It could gain access from the exterior or even from the blood of a wound of the urinary organs; and so he told the Academy, that if he were a surgeon, he would heat his instruments as a preventive, and would treat urinary fermentation by injections of carbolic acid.

M. Pasteur maintained that ammoniacal urine was a proof that special germs (ferments) had found their way from the air into the bladder. How many more sorts of germs are we to suppose always floating in the air?—Nay, always penetrating into the most unlikely and inaccessible parts.—*The Doctor.*

Powdered Coal-Tar for Wounds.—M. Magnis-Lahens, of Toulouse, adds charcoal to coal-tar (33 per cent. of the latter), and thus obtains a light and porous powder, which does not irritate wounds, and which is easily washed off with cold water. This combination is a very useful mixture of two antiseptic substances. The charcoal absorbs the gases formed by fermentation, coagulates the albumen, and prevents its decomposition, thus effectually assisting the carbolic acid contained in the coal-tar.—*Med. and Surgical Reporter.*

Ergot in Headache.—Dr. Silver, of Ohio, says, in the *Philadelphia Medical and Surgical Reporter*, that no remedy will relieve a larger proportion of sick and nervous headaches than ergot. He thinks its *modus operandi* is by contracting the muscular fibres of the arterial walls, thus lessening the quantity of blood in the brain. Dose, ten to twenty drops of the fluid extract every half hour until relief follows.

Electricity in Gravis Disease.—Recent writings of Dr. Meyer (*Berlin. Klin. Woch.*, 1873) appear to authorize the hopes founded on the galvanic current considered as an important agent in the cure of this terrible disease. Meyer advises galvanization of the sympathetic. According to this author, galvanic treatment must be long

continued, and so that a slight galvanic ascending current may traverse the great sympathetic for two or three minutes each sitting. The proceeding consists in applying one pole to the submaxillary region, and the other above the affected eye. In the course of some sittings, the practitioner commences to observe the amelioration of the pathological processes, as is confirmed by the four cases cited by the author in his notable memoir.

Electricity in Catarrhal Jaundice.—Dr. Gerhardt (*Berlin. Klin. Woch.*, 1873), after many attempts, proposes definitively faradization to combat catarrhal jaundice. By means of a careful percussion along the lower margin of the liver, he assures himself of the position of the gall bladder. In some cases he says, the point occupied by this organ may be seen and felt, since it causes a small prominence below the corresponding costal rib, which moves up and down during inspiration and expiration. In all cases between the limits which correspond to the lateral oscillations in position of the gall-bladder, we meet with a dull spot, obtuse, and semicircular, with the convexity downwards, or with a point at the edge of the liver more markedly dull. This point being ascertained, he applies over it an electrode of a strong induction current. The other electrode is applied upon the anterior wall of the abdomen in a point opposite to the first. Almost always when the current is powerful it produces immediately a gurgling heard by the ear. In many cases this effect cures, and the fæces become darker and the urine paler.

Chronic Catarrh of the Pharynx Treated by Galvano-Caustics.—In an article published in *Deutsche Zeitschrift für Chirurgie*, Dr. Carl Michael, of Cologne, advocates the use of galvano-caustics in chronic catarrh of the pharynx. He mentions seventy cases in which he was entirely successful, and in many of which inhalations, cauterizations with nitrate of silver, employment of mineral waters, etc., had failed.—*London Med. Record.*

Electricity in the Treatment of Chilblain.—Perhaps no disease so simple in its origin and pathology is so difficult at times to cure as chilblain. At this season of the year every physician's office presents its cases. It has seemed to me that the various plans of treatment recommended by different authors are but temporary in their results. I have found ordinarily the liq. iod. comp., and aq. ammon., in equal parts, as recommended by Dr. Balfour, of the Royal Military Asylum at Chelsea, the most marked in its action.

Last winter, while treating a number of cases, it occurred to me to try the influence of electricity. I accordingly applied the secondary or

induced current, and the result fulfilled my anticipations. This winter an aggravated case, of long standing, in a gentleman of this city, presented itself to me, and I pursued this mode of treatment: the relief afforded was so decided as to leave no room for doubt in my own mind of its efficacy.

We have, as the ultimate result of frost-bite, a partial or complete paralysis of the vessels, as well as a nervous element, evinced by the pain and intolerable itching. Electricity tends to give tone to the parts and restore them to their normal condition. This is the result sought for in all applications, but they only do so temporarily in a majority of cases. The cause reappearing, the pathological condition still remaining, we have a return of all the symptoms. I am convinced, from the success met with in those cases where I have used it, that electricity, applied for a period of time every day, or at longer intervals, as the case may be, will place the parts in a healthy condition and effect a permanent cure.—*Medical Times.*

Medical Value of Arterial Compression.—Dr. E. De Morgan (*London Lancet*, Dec., 1873) recommends in certain diseases the application of pressure to the axillary and femoral arteries. Though this procedure stops the circulation of probably half the blood, the frequency of heart-beats and arterial pressure remains as before. Hence but half the normal amount of blood enters the heart or the lesser or greater circulations. Of course, in the lesser circulation the area of the vessels being as before and the blood one-half less, the blood pressure must be diminished. This view he has successfully applied in the treatment of three sets of cases, with gratifying success:

(1) Hæmoptosis in consumptive cases and from wounds of the lung.

(2) Spasmodic asthma and emphysematous and cardiac dyspnœa. These cases are relieved by the diminished necessity of oxidation, the result of damming back venous blood from the lungs.

(3) As a dry cupping of the lung in inflammatory diseases.

The Nasal Douche.—Theo. Weber, of Halle, was the first to utilize the fact that a stream of water passed through one nostril will escape through the other, after passing through the naso-pharyngeal space. This is due to the well-known reflex effect upon the velum palati, causing it to retract, and shut off the naso-pharyngeal space from the pharynx. Dr. Seyfert lays down three leading principles, to be observed in the application of the nasal douche:

1. The vessel containing the fluid to be injected must not be higher than the forehead of the patient.

2. The forehead must not be inclined forward too greatly, for if it be the fluid enters the frontal sinuses.

3. The fluid used in each case must be tepid, and in bad weather the patient should not leave the room for one quarter of an hour after the use of the douche.

Dr. Seyfert says that he has never known a case of secondary inflammation to occur when these rules have been observed. The writer alludes to the fact that Profs. Moos, Knapp and Roosa have written in unfavorable terms of the use of this means of treatment; but as he has seen numerous cases of the use of the nasal douche in the clinic of Prof. Wendt, in Leipsic, without any accidents, he thinks there must have been some error in its use in the case related by Prof. Roosa, in Vol. 1 of Moos and Knapp's Archives, especially in regard to the height of the vessel above the forehead. Everything in such cases depends upon one point, according to the writer, viz., the hydrostatic pressure. If the vessel is higher than the patient's forehead, the error may be vital.

Prof. Gruber does not pronounce positively against the nasal douche of Weber, but thinks it may be on *à priori* grounds less safe than his method of applying medicated fluids to the nares, by direct syringing.

If his method is used, the surgeon can more readily control the force of the injected fluid, which can be augmented sufficiently to throw it into the tympanum or mastoid cells, or applied so gently as to reach only the naso-pharyngeal space. Another point of great difference between Gruber's method and that of Weber is, the interrupted stream of the former. This interruption of the stream allows the patient an opportunity of noticing the condition of the ears.

In Gruber's method, only two fluid ounces are injected at once, which small quantity can be injected with greater or less vehemence according to the need. Gruber always examines the membrana tympani after the application of the douche. Since the injected fluid always manifests its effects very distinctly upon the membrana tympani, it furnishes us with an index of the amount of irritation and reaction to be looked for.

The air douche should be used immediately after the application of the fluids by the syringe, if their effects are to be modified in the tympanum, for the air will displace some of the fluids and neutralize their effects.—*Trans. Amer. Otolog. Society.*

How to Use the Actual Cautery.—Dr. J. S. Camden, in a communication to the *Medical Times and Gazette*, makes some practical observations on the use of the actual cautery. He says: "I see in Dr. Fayrer's work on the 'Thanatophidia of India,' that the actual cautery was used unsuccessfully (which in another place he calls a *red-*

hot iron). This is not what I was always taught and had seen as actual cautery. I consulted 'Cooper's Surgical Dictionary,' edited by Lane. There it is called an iron in a state of incandescence, which is, according to Maunder, incipient white heat. Prof. Syme, in his lecture, calls it a red-hot iron. I also made many inquiries of medical friends, and all spoke of it as a red-hot iron. Having twice assisted in using and once used actual cautery, I hope I know something on the subject. When actual cautery is to be used, the iron must be heated till it is really of a white heat, and looks almost as white as white paper. If then applied, it destroys the part instantaneously, giving no pain; but it must be removed quickly on the heat decreasing, and then another iron applied. Several irons are required for use, and a fierce fire kept up by bellows, till your object is attained; but if a red-hot iron only is used, the agony is intense, as we all know who have touched it. The first time I saw it used, on a girl of fourteen years, no pain was given, to my great astonishment; the second time, on an elderly person (both for fungus in the upper maxillary), her screeching was fearful, till I told the operator his irons were not half hot enough. He then requested me to heat them properly, which being done, not a murmur was heard. The irons were being used only red-hot. The last time was opening four or five sinuses in a favorite horse's shoulder. He never flinched, and scarcely seemed aware of what was being done. The only thing he noticed—for he never moved—was the hissing made by the destruction of the skin. Actual cautery is painless. I would suggest using—to obtain the white-heat for actual cautery—a large spirit blow-pipe."

Dilatation of the Cervix Uteri in Dysmenorrhœa.—Dr. John Ball recommends the following method of procedure in cases of constricted cervix uteri. Having procured the thorough evacuation of the bowels of the patient, place her upon her back, with the hips near the edge of the bed, and when she is profoundly anæsthetized introduce a three-bladed, self-retaining speculum; seize the os uteri with a double-hooked tenaculum, draw it down towards the vulva, and then introduce a metal bougie as large as the canal will admit, following it in rapid succession by others of larger size, until one is reached which represents the size of the dilator. Then insert the dilator and stretch the cervix in every direction until it is enlarged sufficiently to admit a No. 16 bougie, which is all that is generally necessary. Then introduce a hollow gum-elastic uterine pessary of about that size, and retain it in position, by a stem secured outside the vulva, for about a week, in which time it has done its work and is ready to be removed. During this time the patient should be kept perfectly quiet, and usually upon

her back. Dr. Ball claims that the operation saves a great deal of time, causes much less constitutional disturbance than the use of tents, and is not only safer than the metrotome, but is free from some serious objections to the use of the latter, there being no resulting cicatrix to interfere with the dilatation of the parts, and the condition of the patient after an unsuccessful operation being no worse than before. He says that it relieves the constriction entirely, by breaking up all the adhesions, which are often firm and unyielding; that, acting as a derivative, it cures the hyperæmia of the cervix; and that, further, it establishes a radical change in the nutrition of the whole organ.

He details nine cases of stricture of the os and cervix complicated with vaginismus, chronic endocervicitis, version, sterility, dysmenorrhœa, etc., in all of which very great relief or permanent restoration to health was effected by rapid and forcible dilatation. In a foot-note the editor of the *New York Medical Journal* quotes Dr. Ellinger, of Stuttgart, as recommending the operation,—1, in stricture of the cervical canal; 2, stenosis due to flexions; 3, metrorrhagia in a flabby, swollen uterus, but without new growths; 4, retained catarrhal secretions; 5, for exploration of the uterine cavity; 6, replacement of a flexed uterus; 7, sterility. Dr. Ellinger declares that he has never had reason to regret rapid dilatation, and urges it, where dilatation is justifiable at all, to the exclusion of all other methods.

Nitrate of Silver in Uterine Disease.—Recourse has been had to pencils of nitrate of silver. But the caustic which M. Blanchard prefers is a mixture of nitrate of silver and nitrate of potash. These are the pencils which he has seen used in the service of M. Laroyenne. He describes with care the operative proceeding precautions of the able surgeon of La Charité. He establishes the indications and contra-indications of this method of treatment, relates six cases of cure obtained in cases of chronic metritis, and terminates his interesting work by the following conclusions:—

1. Introduced into the uterine cavity, the pencil of nitrate of silver and potash is a completely inoffensive agent.

2. It may be left in the cavity if it be necessary to profoundly modify the mucous membrane.

3. Its employment is formally contra-indicated in all inflammatory states of the uterine annexes, or adjacent tissues.

4. Its application has been followed by cure in cases of abundant leucorrhœa, chronic metritis of a hemorrhagic character, and occlusion of the internal orifice of the neck with retention of the secretions.

5. In the case of metritis developed under the influence of a fibro-

ma or deviation of the uterus, it gives marked ease, and often causes the disappearance of the greater part of the symptoms; but not acting on the cause, it does not save the patient from relapses.—*Obstet. Journ. Great Brit.*, January, 1874.

The Spinal Hot-Water Bag in Uterine Disease.—Dr. Athill (*Med. Press and Circular*, Nov. 19, 1873), says:—I have for some years past employed the spinal hot-water bag—1st, in the treatment of menorrhagia; 2dly, for the relief of pelvic distress arising in course of uterine or ovarian disease; 3dly, in some cases of dysmenorrhœa. I do not advise you to rely exclusively on the use of the hot-water bag in cases of menorrhagia; nor to suspend other treatment while you employ it, but to use it in conjunction with such medicine as you may deem fit. But this I can promise you, after very prolonged and careful observation, that in many cases of profuse menstruation, especially in patients of relaxed muscular tissue, or in those suffering from the effects of imperfect involution of the uterus after delivery, you will often succeed in restraining for the time the excessive loss, by applying to the lumbar vertebræ a 10-inch Chapman spinal bag, filled with water of the temperature of about 110° Fahr., and this when other means have failed. The size I have just named is the best for the purpose, and the bag should be worn for not less than two hours at a time. The bag known as "Chapman's" is far superior to the ordinary hot-water bag, from the use of which latter I have not derived any satisfactory result. Even greater benefit, however, follows the use of a hot-water bag in cases of pain depending on the existence of almost any of the ordinary forms of uterine disease.

Few patients labor under any of these affections without suffering from pain in the back, above the pubes, over one or other of the ovaries, or along the margin of the false ribs; and few indeed there are of those who do not derive relief from the judicious use of the hot-water spinal-bag. Indeed, I have often wondered that it is orderd so rarely. In like manner in cases of dysmenorrhœa, especially if they are of inflammatory or congestive origin, marked relief from present suffering often follows the wearing of the hot-water spinal-bag for two hours at a time at intervals through the day. I say present relief, for I do not think its action exerted any permanent effects on any of the cases in which I have employed it.

Icterus after the Administration of Hydrate of Chloral (Dr. A. Wernich, *Deutsches Archiv für. Klin. Med.*).—Reports of cases of icterus following the administration of chloral have already

been published both by Dr. Wernich and by other observers; and to these he wishes to add those contained in the present article, in the hope that physicians using this drug may be induced to contribute their observations, and thus aid in the accumulation of sufficient data to afford an explanation of its influence in producing icterus.

Case I.—A woman, the wife of a laborer, æt. 37, had been suffering for a year from indigestion, and at times vomiting, and for twelve weeks from severe pain in the right hypochondrium. For five days previous to her admission into the hospital she had noticed a yellowish color of the skin and conjunctiva, and that her urine was of a dark color. In the epigastric and right hypochondriac regions there could be felt a tumor of firm consistence almost as large as a man's head, which by palpation and percussion was found to be sharply defined from the liver.

During the ensuing two weeks the icteroid hue of the skin was but slight, and the size of the tumor steadily but slowly increased. These symptoms were accompanied by paroxysmal attacks of pain, the severity of which constantly increased, but which at first were to some extent relieved by large hypodermic injections of morphia. Later, however, morphia ceased to afford relief, and a trial of chloral was made. The patient passed a quiet night, but in the morning was found in a state of stupor, and the surface of the entire body was of an olive-green color. This continued for two days, accompanied by a mild delirium until the death of the patient, ten days later.

Case II.—A woman, æt. 34, had suffered for three years from want of appetite, vomiting, and a slight degree of jaundice. Paroxysmal attacks of pain came on, the intensity of which steadily increased, and, as morphia failed to give relief, chloral was given, with results similar to those of the first case. The following morning the skin was found deeply jaundiced, the patient was sleepy, and there was some mental disturbance. Death followed the next day.

Case III.—A woman, æt. 40, had mitral insufficiency of high grade, and suffered from results consequent upon that affection. To relieve her from the sufferings due to hydrothorax, after the failure of diuretics resort was had to paracentesis, which afforded temporary relief. The sufferings of the patient during the night being very great, morphia was administered, but with no good effect. Chloral was given and sleep produced. On the following morning the entire body was of an olive-green color, and the patient complained of unpleasant sensations about the head. The jaundice continued until the death of the patient, which occurred about two weeks later. The urine in this case was scanty, and contained albumen, but no biliary coloring-matters. The dose of chloral given in each of these three cases was three grammes.

Dr. Wernich considers that all the suggestions that have been made in explanation of this result of the administration of chloral are unsatisfactory. He concludes also that as yet no rule can be laid down to govern the exhibition of chloral in cases in which hepatic disease exists, for although in the cases narrated the administration of chloral seemed to promote the appearance of the icterus, yet it is often given without injury to those having affection of the liver, either active or latent.

The Action of the Bromide of Calcium.—According to the statements of Hammond (*Berliner Klin. Woch.:* Guttmann), the bromide of calcium displays more activity in its action in nervous diseases than the bromide of potassium, because it is more readily decomposed, and thus furnishes free bromine more quickly. This last inference can scarcely be supported, since Guttmann and Eulenberg have already demonstrated that the action of bromide of potassium is not due to the bromine which it contains, but to the potassium, and that it operates in the same way as the other potassium salts. The bromide of sodium, on the other hand, has a different action from the bromide of calcium, since it manifests the same powers as the other sodium salts,—a conclusive proof that the bromine is not the active constituent in the salts under discussion. These experimental results are confirmed by the therapeutic use of these salts, the cheaper chloride of potassium being substituted for the more costly bromide. Bromide of calcium is three to four times less active than bromide of potassium, it requiring the injection of one-fourth gramme of the lime salt to kill a frog, while eight grammes were needed to produce the like result in a rabbit. The fatal results manifested themselves more slowly than after the smaller doses of the bromide of potassium—two to four grammes of the last-named salt producing death in a rabbit in thirty minutes, while, with eight grammes of the bromide of calcium, death occurred only after several hours. The animals died with the symptoms of a gradually increasing collapse.

The evidences of the poisonous action of the potassium salt are of an entirely different character: the animals die with symptoms of paralysis of the heart, dyspnœa, convulsions, and symptoms of suffocation. The action of this salt upon the heart in warm-blooded animals is so marked that its effect upon the nervous system is scarcely noticeable. The bromide of calcium, on the contrary, does not act at all upon the heart, but upon the nerve-centres, and to a much less degree than the bromide of potassium. The iodide and chloride of calcium act in exactly the same way as the bromide.

It can then be stated, in summing up the facts relative to the action

of these salts, that the bromide of calcium acts as do the other calcium salts, and that the bromine is not the active element.

The bromide of calcium is, like the bromide of potassium, a sedative to the nervous centres, but is much weaker, and if it is to be used in therapeutics must be given in much larger doses.—*London Med. Record.*

Risks Attending the Use of Bromide of Potassium.—Dr. James Norton, in *Glasgow Med. Journal* (Feb., 1873), details several cases, in which the use of bromide of potassium was followed by very unpleasant results. Case first was a woman aged forty, of strumous family. She was suffering from slowly progressive paralysis of one arm and leg of the same side. A mixture of bromide of potassium and ergot was given her. She became rapidly worse and died in a few days. The train of circumstances were such as to render it evident that the medicine hastened the result. Case second was a lady aged fifty. She complained of general muscular rheumatism. Bromide of potassium, in ten-grain doses, three times per day, was prescribed for her. After using the medicine a few days she became gradually so confused and stupid in look, in fact, bloated in aspect, so unsteady in gait, and unable to walk, that she fell in getting out of bed. The medicine was discontinued, and these alarming symptoms speedily disappeared under the use of a bitter tonic. Case third was almost entirely similar, excepting that the medicine was given for pains in the legs and feet.—*Detroit Review of Medicine.*

The Hypodermic Use of Ether has been found beneficial in collapse from hemorrhage. It is injected till the breath shows its presence. There are no unpleasant local effects.

Glycosuria from the Administration of Nitro-Benzole.—Dr. Carl Anton Ewald, of Berlin (*Centralblatt f. die Med. Wissenschaft.*), has found that after subcutaneous injections of nitro-benzole in the guinea-pig, in quantities from 0.5 to 2 grammes, its urine, upon being treated with animal charcoal, affords a substance which possesses reducing powers and gives the characteristic reaction of sugar. This phenomenon is noticed as early as three hours after the experiment has been made, and continues until twenty hours have elapsed; and at the end of twenty-four to thirty-six hours traces of sugar have entirely vanished from the urine. The amount of sugar found is greatest four hours after the injection, when it reaches 1.9 per cent. But this may not be accurate, since a quantitative analysis of the urine was not made in all cases. In regard to the question of the influence of the splanchnic nerve upon the production of sugar in the urine, no conclusion was

attained, because the animals which had been subjected to this operation died before the time requisite for the appearance of sugar had elapsed. In his experiments upon dogs he was unsuccessful in producing glycosuria by administering nitro-benzole hypodermically, but after giving it by the mouth sugar appeared in the urine in large quantities. If the different results from these experiments upon two classes of animals are constant, they may afford, upon the one hand, evidence of a characteristic difference in the action of the drug upon herbivora and carnivora, and, on the other, some clue as to the rationale of the production of sugar in the urine by the substance in question.—*London Med. Record.*

The Action of Spartein upon the Animal Organism.—Under the above title, Dr. Fick gives (*Archiv für Exper. Path.*) an account of a number of experiments made upon frogs and other animals with this substance.

His conclusions are as follows: 1. So far as can be ascertained, spartein affects the intellectual functions both of frogs and the mammalia, and can therefore to a certain extent be regarded as a narcotic. But this effect upon the brain is not a very marked one in degree, since, even in cases where the most decidedly poisonous results have been produced, entire suspension of consciousness has not been observed.

2. Spartein exhibits powerful toxic effects upon the spinal cord, the reflex action of which in particular is lessened to a great degree.

3. Spartein paralyzes the motor nerves, which after a larger dose of the poison lose their electrical excitability entirely.

4. A small dose of spartein causes the suspension of the electrical excitability of the vagus, so that its excitation produces no interfering influence upon the motions of the heart. In larger doses the governing centres themselves are paralyzed, so that neither by the use of muscarin nor by other means can a diastolic cessation of the heart be produced.

5. In the poisoning of mammalia by spartein, death is dependent upon paralysis of the respiratory centres.

By employing artificial respiration, life may be prolonged in the poisoned animals for some time.—*Philad. Med. Times.*

The Physiological Action of Ozone (*The British Medical Journal*, December 13, 1873.)—Dr. McKendrick and Mr. Dewar, in the course of some experimental investigations with animals, found that—

1. The inhalation of an atmosphere highly charged with ozone diminished the number of respirations per minute.

2. The pulsations of the heart were reduced in strength, and this organ was found beating feebly after the death of the animal, which showed that life was not destroyed by direct action on the heart.

3. The blood was always found in a venous condition in all parts of the body, both in cases of death in an atmosphere of ozonized air and of ozonized oxygen.

4. Ozone exercised a destructive action on the living animal tissues if brought into immediate contact with them, but it did not affect them so readily if they were covered by a layer of fluid.

5. Ozone acted as an irritant to the mucous membrane of the nostrils and air-passages, as all observers had previously remarked.

Alcohol.—The *Deutsch. Archiv f. Klin. Med.* says that Dr. Riegel has made eighty-six experiments on convalescents, and he concludes that alcohol has the power of lowering the temperature, but only a few tenths of a degree, while in exceptional cases the temperature rose.

The repetition of the doses diminishes their effect, and those who habitually drank alcohol exhibited no depression of temperature. Riegel also experimented on fever patients, and here the depression was less or none. He therefore regards it as useless to lower the temperature, but thinks it may be valuable to prevent tissue waste.

Professor Sée, at the Charité, lately lectured on the subject of alcohol, and strenuously supported the theory that alcohol prevents tissue waste. He distinguishes between the effects produced by various quantities, and thinks we should concern ourselves only with moderate doses. These he declares excite the respiration and the circulation at the surface, while they hinder tissue waste, the alcohol being consumed instead of the tissues. Under the influence of alcohol, Sée says the waste of the muscular system is carried off by the increased rapidity of the circulation, and by this he explains its use by all nations when about to undergo exertion or after such efforts.

In the *Practitioner* Dr. Anstie has taken up the subject, and announces he will shortly publish a new series of experiments, pending which he cannot give an epitome of his views. He says, however, in the December issue, that the great urea waste in fevers may be limited by alcohol under certain conditions, and that this is not a mere momentary damming up of the waste, but that the excretion remains at a low level throughout, and defervescence is not followed by increase of urea waste.

Nature, of Dec. 18, published an abstract of Prof. Binz's paper at the British Association for the Advancement of Science, and as so many draw upon Binz, we are glad to hear that his paper is to appear

at length in an early number of the *Journal of Anatomy and Physiology*. Binz concludes that alcohol has a threefold power in putrid fever: 1. Diminution of heat; 2. Reduction of the putrid processes; 3. Rising of the action of the nerves and of the heart.

Nature adds that Dr. Brunton said the key to these conclusions was lessening of the oxidation of tissues by alcohol.

The Influence of Alcohol on Conception.—At a meeting of the French Med.-Psych. Association M. Auguste Voisin made some interesting observations on:—

1st. The influence of the various alcoholic drinks upon the form of mental derangement.

2d. On Conception during Drunkenness.—As the result of seventeen cases which were fully examined it would appear that wine, brandy, and absinthe exercise an almost identical influence upon the products of conception. Epilepsy, convulsions in childhood, and chronic myelitis are the possible consequences of conception during drunkenness, whatever the intoxicating agent may be.

3d. On Conception during Chronic Alcoholism, without Drunkenness.—In the eighteen cases observed, there were born eight idiots and ten epileptics.

Of the eight idiots, four were the issue of fathers who indulged in wine, two of brandy drinkers, and two had mothers who drank brandy.

Of the ten epileptic children, five had fathers who drank brandy and wine, three who consumed only wine, and two who intoxicated themselves by absinthe.—*The Clinic.* From the *London Journal of Mental Science.*

Effect of Sugar upon Generation.—Prof. Henry Tanner, Queen's College, Birmingham, says:—"I have every reason to believe that the action of sugar is most important in its influence upon the generative system, and I think there is just cause for considering that any animal may, by its use, be rendered incompetent for propagating its species. A breeder of some eminence, with a view to an improvement in the condition of his herd, added molasses to the dry food which he gave to his stock. It certainly produced the result he anticipated, for their general condition and appearance were most satisfactory; but this was accompanied by an influence he never expected, for his stock, which had always realized high prices as breeding stock, now, with few exceptions, proved valueless for that object, male and female being alike sterile.—*Boston Jour.*, Jan., 1874.

MATERIA MEDICA.

A NEW SOLVENT FOR PHOSPHORUS; ITS PREPARATION AND PHARMACEUTICAL USE.

At the last meeting of the British Pharmaceutical Society, Mr. A. W. Gerrard read a paper on this subject, saying: The principally known and most generally adopted solvents of phosphorus for pharmaceutical purposes are bisulphide of carbon, chloroform, ether, alcohol, oil of almonds, oil of theobroma, and mutton suet.

The power of these bodies to dissolve this element varies from any proportion to less than half per cent.; the most powerful being bisulphide of carbon, the least, alcohol.

Most of the above solutions of phosphorus, when dispensed, are of an unsatisfactory and unstable character. Those which are fluid, and miscible with water in the presence of mucilage—the manner in which it is usually prescribed—are rapidly decomposed and become inert; they are likewise nauseous and objectionable to the patient in an extreme degree. The solid forms are but little better, and are exceedingly troublesome to manipulate.

Bisulphide of carbon has been recommended by Mr. Proctor, of Newcastle, as a means of dispensing phosphorus in pill-form, and it answers the purpose very well, with the exception that the pills retain a compound smell of phosphorus and bisulphide of carbon which is repulsive in the utmost degree.

The new substance which I propose to add this evening to the list of solvents of phosphorus is resin, that body described in the Pharmacopœia as "the residue of the distillation of the turpentine." This substance suggested itself to me among others as a probable solvent, and the result of my experiments upon it is, that I have found it capable of dissolving four or more per cent. of phosphorus; the limit of its solubility is a question for further experiment.

I would call this substance phosphoretted resin. The method of preparing it is this:—Take a wide-mouthed, well-stoppered bottle, and weigh it, then melt a quantity of resin sufficient to fill the bottle; let the

bottle be warmed, then pour in the resin to nearly but not quite fill the bottle; re-weigh, and for every ninety-six parts of resin take four of phosphorus. Now observe if the resin is in a fluid state; if so, add the phosphorus, and fix the stopper tightly. Place in a sand-bath previously warmed, and apply heat at 200° C. or 392° Fah.; digest at this temperature, and shake frequently, until the phosphorus is dissolved.

The kind of resin to be used in this preparation is the black translucent variety, known in commerce as rosin, not that pale yellowish kind usually met with in chemists' shops, unless it has previously been deprived of its water, of which it contains a varying amount, sometimes ten per cent.

In conducting the process, it is necessary to observe the following precautions:—In adding the phosphorus, if possible let it be in one piece, and take care that the resin is previously in a fluid condition, as then the phosphorus readily sinks below the surface, and is covered by the resin; otherwise, if the phosphorus were in small pieces and the resin semi-fluid, the phosphorus would rest on the half-hot resin, and speedily take fire; but by observing the above precautions, this accident may be prevented.

A bottleful of the preparation should be made at a time, as I find there is great risk of accident (having had one myself) if the vessel is only partly filled. The phosphorus is also volatilized and deposited in the upper portion of the bottle.

Keep a thermometer in the sand-bath during the process, and maintain the temperature between 200° and 210° C. At higher temperatures the resin boils, and the heat is liable to change the phosphorus to the red amorphous state.

When the prepared resin has cooled, it is difficult to remove it unless the bottle be broken; the method I have adopted is to draw it from the bottle, when partly cooled, under hot water.

It is a pharmaceutical process which, like many others, requires care and attention to insure success, but whatever difficulties may arise, to a practical person a remedy will suggest itself.

I will here mention a curious change which takes place if this phosphoretted resin be reheated. When it reaches a certain temperature it becomes of a whitish cream color throughout; if the temperature be raised still higher it again becomes transparent; this phenomenon does not occur in the cooling. It is probably due to the influence of molecular change.

The formula I would suggest for its exhibition is the following:

Take of Phosphoretted resin, 4 per cent.....25 grains.
Powdered white sugar.....75 "
Tincture of tolu, a sufficient quantity.

Pulverize the resin, mix with the sugar, and form into a mass with tincture of tolu—eight to ten drops are sufficient; then divide into twenty pills, each pill will contain one-twentieth of a grain. This forms a mass of an excellent consistence, and pills made therefrom retain their form and present an elegant appearance without the addition of any coating; they have but a faint odor of phosphorus, and that may be completely removed by the addition of oil of peppermint.

The experience gained from the administration of these pills in the in, and-out-patients' departments of the hospital to which I am attached, proves that the therapeutic properties of the phosphorus are in no way injured or modified by this combination, but that it is fully equal to any that had been previously used.

In conclusion, I consider the advantages of this preparation to be that it is inoffensive to the taste of the patient, definite and reliable for the prescriber, ready and convenient to the dispenser, and I believe, judging from its nature, it has unlimited keeping powers.—*Canadian Pharmaceutical Journal.*

SOLANINE IN POTATOES AND POTATO SHOOTS.

Solanine is an organic base or alkaloid discovered in 1820 by Desfosses in the berries of the black nightshade (*solanum nigrum*), from which it takes its name. It is also found in small quantities in the tubers and green parts of the potato. It is very poisonous, two or three grains being sufficient to kill a rabbit in a few hours, first, however, producing paralysis of the hinder extremities. The same symptom has been observed in oxen after eating potato shoots.

O. Bach has instituted a series of experiments with sprouted potatoes, to ascertain whether this poisonous alkaloid is present in the potato itself, and, if so, where. His results prove that in both boiled and raw potatoes solanine is found only in the skin and at the base of the sprout. In water, whether fresh or salt, in which potatoes has been boiled, he could find but slight traces of solanine, after evaporating down large quantities of it. Even when boiled for six hours the result was the same. The presence of solanine in the skin was easily proved. Whether, as some suppose, this alkaloid is distributed throughout the plant, and whether fresh potatoes contain it or whether it is generated during germination, this chemist does not decide.

Bach found the best reagent for testing for solanine to be a mixture of sulphuric acid and alcohol. The smallest quantity of solanine gives with this reagent a beautiful rose or cherry red. The most beautiful color is obtained by mixing equal volumes of sulphuric acid (sp. gr.

1.84) and alcohol, and adding a little solanine while the mixture is still warm. This reaction is remarkable for the permanence of the color, which does not fade for five or six hours. The presence of a large quantity of morphine does not interfere with this reaction, which is the more important because, in judicial testing for alkaloids according to Stas's method, morphine and solanine are the only alkaloids not taken up by ether from acid, or from alkaline solutions.

To obtain pure solanine, Reuberg boils fresh potato shoots in water slightly acidulated with sulphuric acid; the rapidly expressed liquid is precipitated, while still warm, by ammonia; the dried precipitate is exhausted with boiling alcohol, and the solanine, which separates almost completely on cooling, is several times crystallized from alcohol, till it dissolves in hydrochloric acid without turbidity. According to Kromayer, it is most easily obtained by precipitating the expressed juice of the potato germs with lime, without using acid, and exhausting the precipitate with alcohol.—*Journal of Applied Chemistry.*

PHOSPHATE OF IRON AND ITS COMBINATIONS.

Dr. Charles Geisse Polk writes on this subject to the *Philadelphia Med. and Surg. Reporter* as follows:—"Iron has long deservedly held a very high place in the list of tonics. At least one hundred different combinations have been proposed, and more than one-third of that number are incorporated into the different pharmacopœias. These are divided into two chemical classes:—the proto-salts and the sesqui-salts, designated the ferrous and ferric salts; the former being universally esteemed as the more powerful remedial agents, the latter as the more easily managed pharmaceutical products. Of the former, the proto-carbonate, the iron reduced by hydrogen, the proto-sulphate, the proto-citrate, and the proto-phosphate, are especially esteemed. Of the latter, the chloric tincture, the ammonio-citrate, the pyro-phosphate, and alkaline tartrates receive high consideration. Notwithstanding the numerous objections very justly argued against the tincture of the ferric-chloride, it is, and probably ever will be, the most valued, and most extensively used, of the preparations of iron. The preparation I especially desire to consider in this paper, the phosphate of iron, although by no means a modern one, is scarcely ever used in its officinal form. Uncombined, it has never gained much favor. The preparation is, however, a good one, and is capable of being combined so as to form some excellent chalybeate pills. The following formulas are very favorite ones with me:

℞. Ferri phosphatis..... ʒi.
Quiniæ sulph..... ʒss.
Ext. ignatiæ amaræ..... gtt. vi.
M.

Divide in pills No. xxx. Take one three times a day.

℞. Ferri phosphatis..... ℈ij.
Quiniæ sulph..... ℈i.
Ex belladonnæ alcoholic..... gr. v.
E. aconiti alcoholic..... gr. iij.
Ex. cannabis indicæ..... gr. x.
M.

Divide in pill No. xx.

But however valuable a pilular form of iron may be, it is not that which will hold the popularity of a solution, either in the form of a syrup, tincture, or elixir. Even the iron reduced by hydrogen, which is unquestionably the best restorer of iron to the blood, is comparatively little used. The proto-carbonate still holds the preference of the gray-headed members of the fraternity, while the soluble scaled salts with ammonium-citrate are preferred by the younger members of the profession; the choice is between the citrate and pyrophosphate, with perhaps a predominating preference for the latter. The bibasic phosphate constitutes the iron ingredient in nearly all the proprietary elixirs, sold under the names of Elixir Phosphate of Iron, Quinia, and Strychnia; Elixir of Calisaya ferrated, and Elixir of Gentian; the tribasic phosphate being ill-adapted for the purpose, and a solution in an alcoholic menstruum being very unstable.

The theory, or theories, upon which the phosphates and hypophosphites have grown into the esteem of the medical world may thus be briefly stated: Phosphorus, as is well known, is an important element in the brain and nervous system, the expression, "thoughts that burn" being a physiological fact as well as a poetic figure. Dr. Churchill, an American physician practising in the capital of France, conceived the idea that phthisis pulmonalis emanated from a deficiency of phosphorous in the system. This deficiency he proposed to remedy by introducing phosphorus into the system by means of hypophosphorous acid in the salts of lime and soda. The idea was fascinating, and infatuated a very large portion of the profession. They dreamed that the hitherto relentless upas of human existence was at length mastered; that no longer was its touch withering and its impress death, but that under the life-giving power of the hypophosphites the hectic flush would depart, the cough cease, the emaciated

frame resume its former proportions, and as the cause upon which these accrued was removed, health and strength would be restored, and science would, indeed, be triumphant over the foe which heretofore had baffled human skill, and annually consigned to the grave the beautiful and lovely of earth. This beautiful dream, however, proved delusive; consumption still continued its ravages, and the hypophosphites were found to be less efficient than cod-liver oil, yet capable of greatly enhancing the curative power of the latter. But if the hypophosphites did not confirm those high hopes and lofty expectations, they proved to be a powerful remedial combination, capable of giving beneficial results in wasting diseases hitherto unattained by any known agent. They yet retain the esteem of very many intelligent physicians, although, I believe, the present estimate of them is below their intrinsic value. The formulas for their preparation having been published in Parrish's Pharmacy, and as I presume every physician and pharmacist has a copy of this indispensable book, it is unnecessary to copy them here. A preparation I have long esteemed, containing two grains of the hypophosphite of iron, one grain of the hypophosphite of quinia, and one forty-eighth of a grain of the hypophosphite of strychnia, in each drachm, I make thus:—

℞. Ferri hypophosph..... grs. 192
Quiniæ (fresh alkaloid)..... grs. 96
Strychniæ..... grs. ij.
Acid. hypophosph..... grs. i. (?)
Syrupi..... ℥ xij.

Take the freshly precipitated hypophosphite of iron, the freshly precipitated quinia, and the strychnia, and add sufficient hypophosphorous acid, to form a solution; mix it with sufficient syrup to measure twelve ounces; bottle and carefully cork. This preparation is a very valuable tonic, and seems to me to be more important than any other combination of the hypophosphites. Mixed with equal parts of the syrup of soda and lime hypophosphates, its value seems to be greatly enhanced. Sometimes combined in equal proportions with the syrup of the hypophosphite of manganese, it proves a powerful restorer of lost strength and vigor.

This formula has proved sometimes very satisfactory:

℞. Ferri hypophosph..... ʒij.
Manganesii hypophosph..... ʒi.
Quiniæ..... ʒj.
M.

Divide in pills No. xx. Take one pill three times a day.

* * * * * * * *

Out of my speculating grew my syrup of the phosphate of iron, quinia, and strychnia, which, although not filling my early sanguine expectations, is yet highly valued by myself and a dozen or more physicians. I prepared it thus:

℞.	Sulphate of iron	grs. 800
	Phosphate of sodium	grs. 1280
	Sulphate of quinia	grs. 384
	Dilute sulphuric acid	q. s.
	Aqua ammonia	q. s.
	Strychnia	grs. 10½
	Syrup phosphoric acid	℥ iij.
	Syrup sufficient to make	℥ xxxij.

Dissolve the sulphate of iron in three ounces of boiling water, and the phosphate of sodium in six ounces of boiling water. Mix them and wash the precipitated phosphate of iron until the washings cease to be affected by a solution of the chloride of barium. Dissolve the quinia sulphate and the strychnia in two ounces of water by aid of dilute sulphuric acid, and precipitate the alkaloids by slowly adding ammonia water, and carefully wash them. Rub the phosphate of iron, quinia, and strychnia with four ounces of water, add the syrupy phosphoric acid and dissolve them. Then filter the solution into sufficient syrup to make thirty-two fluid ounces. In the formula published in *The Druggists' Circular* it is directed that the syrupy phosphoric acid be mixed in ℥ xvi. of distilled water, the iron, quinia, and strychnia dissolved in the solution, and ℥ xviii. + ʒ ij. of sugar be added.

The formula here given produces rather a finer pharmaceutical product, and seems less impressible to atmospheric exposure. The formula given in *The Druggists' Circular*, however, will produce *quite satisfactory results* and answer every purpose. Easton's formula, published originally in Aitken's Practice of Medicine, and by some erroneously called Aitken's formula, is prepared thus:

℞.	Sulphate of iron	ʒ v.
	Phosphate of soda	℥ i.
	Sulphate of quinine	gr. 192
	Dilute sulphuric acid	q. s.
	Aqua ammonia	q. s.
	Strychnia	gr. vi.
	White sugar	℥ xiv.
	Dilute phosphoric acid	℥ xiv.

Dissolve the sulphate of iron in one ounce of boiling water, and the phosphate of soda in two ounces of boiling water. Mix them and

wash the precipitated phosphate of iron until the washings are nearly tasteless. Dissolve the sulphate of quinia in two ounces of water by the aid of dilute sulphuric acid, and precipitate the quinia by aqua ammonia and carefully wash it. Dissolve the phosphate of iron and the quinia thus obtained, as also the strychnia, in the dilute phosphoric acid; then add the sugar, and dissolve the whole without heat.

This formula, the one having semi-official recognition, is somewhat defective, and precipitates the iron in a few weeks, so as to modify its therapeutical powers and seriously impair its pharmaceutical beauty.

The dilute phosphoric acid is not sufficient to dissolve the iron, quinia, strychnia and sugar, and hold them in perfect solution; the amount of sugar is not sufficient to preserve the preparation from deterioration from age and atmospheric influences, while the preparation by the above formula of my own seems to be free from these objections.

Being desirous of forming a concentrated syrup of much greater strength than the above, so as to be more convenient for me in the army, I devised the following formula in 1864:

℞. Freshly precip. phosph. of iron	gr. 600
" " quinia	gr. 96
Strychnia	gr. iij.
Syrupy phosphoric acid	f. ʒ iv.
Water	ʒ xiv.
Syrup (very dense) q. s. ad	f. ʒ xij.

Mix the phosphate of iron, quinia, and strychnia in the syrupy phosphoric acid previously diluted with fourteen drachms of water, and dissolve them. Add sufficient syrup to measure twelve fluid ounces, and bottle with a tight-fitting stopper, so as to exclude the air entirely.

Each drachm will represent about five grains of the ferrous phosphate, one grain of the quinia, and one thirty-second of a grain of strychnia phosphate. There are about three grains of free phosphoric acid and about ten grains in basic combination of the same. Although a a good preparation for an army surgeon, it is rather too powerful for private practice. Outside of my military practice I have never used it, although it was a great favorite of mine in the army hospitals.

In compliance with the wishes of several physicians, Mr. Theodore A. Polk, of Seaford, Delaware, prepares the syrup thus:

℞. Freshly prec. phos. of iron	grs. 192
Phosphate of quinia	grs. 64
Strychnia	grs. 2
Dilute phosphoric acid	ʒ x.
Sugar	℥ viij.
Essent. tinct. orange	ʒ iij.
Oil of cardamon	gtt. viij.

Dissolve the phosphates of iron, quinia, and strychnia in the dilute phosphoric acid. Rub the essential tincture of orange and of cardamon with the sugar. Mix all together and dissolve without heat.

Mr. Charles Bullock, of Philadelphia, has proposed a formula which may merit at least a passing notice. The articles and quantity are precisely the same as in Easton's formula. He dissolves the iron and soda in an unnecessarily large quantity of water, and thereby gets a magma rather difficult to wash. His mode of washing on paper-filters has, in many hands, ever proved a very unsatisfactory and annoying process, universally attended with heavy loss. The filters are apt to tear, and portions of the magma will adhere to them. He also dissolves the iron in six ounces of the dilute phosphoric acid and the alkaloids in the remaining eight ounces of the phosphoric acid, and mixes the solutions, then filters, or rather he proposes to filter, through paper, after dissolving the sugar in the solution. By this means the almost unavoidable atmospheric exposure will impair the preparation. The precipitate is generally copious, and discoloration speedily evinced. Of course I speak of my own manipulations of the formula, *which, in my hands, has proved a complete failure.*

LACTO-PHOSPHATE OF IRON AND LIME.

℞. Freshly prec. phos. of iron.....	ʒ iij.
Syrupy phosphoric acid.....	ʒ vi.
Concentrated lactic acid.....	℥ ij.
Freshly prec. phos. of lime.....	℥ iij.
Syrup of orange-flowers, q. s.....	℥ xij.

Add the phosphate of iron to the syrupy phosphoric acid, previously diluted with two ounces of the orange-flower syrup. Mix the phosphate of lime with the concentrated lactic acid, previously diluted with two ounces of orange-flower syrup, and dissolve. Lastly, mix the two solutions together and add sufficient syrup to measure twelve ounces.

IODIDE OF IRON WITH IODIDE OF POTASSIUM.

At the recent evening meeting of the Pharmaceutical Society, Mr. W. Murton Holmes, of 338 Oxford street, read a short paper in which he described an interesting dispensing difficulty and experiments consequent thereon. The following prescription had to be dispensed:

℞.	Potass. iodid.....	℈i.
	Ferri iodid.....	℈ss.
	Syrup. tolut.....	ʒij.
	Aq. destill. ad.....	℥iv.
	M. ft. mist.	

To prepare this, the dispenser in the first place dissolved the iodide of iron and filtered the solution, adding next the iodide of potassium, and finally the syrup. In a few minutes a flocculent precipitate occurred, resulting from the separation of some hydrated oxide of iron, consequent on the slight alkalinity of the iodide of potassium. Mr. Holmes found afterwards that by mixing the iodide of potassium *last*, the mixture retained its clearness for several hours, which remarkably proved the preservative influence of sugar, but the only means he found of producing a permanently satisfactory product was to neutralize the iodide of potassium with citric acid before adding it to the solution of iodide of iron. Some discussion followed this paper, in which the President (Mr. Hills), Mr. Williams, Mr. Rimmington, Professors Attfield and Redwood, Mr. Martindale, and Mr. Bland took part.

Professor Attfield maintained that a dispenser was perfectly justified in using the citric acid, as pointed out by Mr. Holmes. He said the B. P. definition of Pot. iodid. was K. I., but if it had feeble alkaline properties it evidently contained something more than K. and I. Therefore, he thought the most conscientious dispenser might permit himself to add something in order to rectify the property which should not exist.

Professor Redwood, however, regarded the admixture of an ingredient which had not been ordered more seriously. The Pharmacopœia recognized that iodide of potassium might contain a little excess of alkali, and when, therefore, iodide of potassium was ordered, it might be safely assumed that this "recognized" product was intended.

Mr. Martindale referred to the somewhat analogous case of spirit of nitre, which he thought a dispenser would surely be justified in neutralizing when it was found too acid.

Mr. Bland believed that the occasion of the almost invariable alkalinity of iodide of potassium was that in an absolutely pure state it would not keep long, and, further, that as such it could not be produced in such fine crystals.

This statement Mr. Williams confirmed from his manufacturing experience. If the solution were perfectly pure, you got, as a rule, bad and ill-formed crystals, which the public would not have. It seemed

to be the rule that the more impure the solution the better the crystals. Probably the presence of impurities prevented the particles coming together so rapidly, and so made them arrange themselves more regularly when they did come together. It often happened that if some residual liquor were put aside as worthless, perhaps for some months, it would be found on examination to have deposited magnificent crystals. Pure bromide of potassium seemed always to crystallize badly.

Mr. Rimmington mentioned that some years ago Messrs. Southall, of Birmingham, used to make pure iodide of potassium almost transparent, and with beautiful crystals, the largest he had ever seen. It always seemed moist also. There might be great difficulty in the process, and he believed the manufacture had been almost given up; they charged 3*s.* or 4*s.* a pound extra for it.—*The Chemist and Druggist.*

CROTON CHLORAL.

Mr. Alfred H. Mason, Vice-President of the Liverpool Chemists' Association, at the meeting held Feb. 12 ult., read a paper on this substance, of which *The Chem. and Drug.* reproduces the following:—

A new remedy, with chloral as its basis, and introduced by the discoverer of the therapeutical application of hydrate of chloral, naturally commands attention. At one of our general meetings in 1872 session, I exhibited a specimen of this, then new, compound, named by Professor Liebreich croton chloral hydrate.

Within the last few months this medicine has commanded much more of the attention of medical men, so that the requirements of it somewhat exceed the first demand for its predecessor when sold at about the same price.

Crotonic chloral was discovered somewhat accidentally by Drs. G. Kraemer, and Dr. A. Pinner.* These gentlemen were undertaking experiments on the action of chlorine on aldehyde, chiefly in the hope of thus obtaining chloral, and of being able to utilize the valueless residue from the first runnings obtained in the distillation of crude spirit, which consists mainly of alcohol, aldehyde, and paraldehyde.

Chlorine was passed into aldehyde, at first carefully cooled in a freezing mixture, and only heated to 100° at the close of the reaction. The first few bubbles caused the separation of a small quantity of solid met-aldehyde, whether originally present in the aldehyde, or formed by the reaction, is undecided. After a short time evolution of hydro-

* Ann. Ch. Pharm., clviii. 37.

chloric acid set in and every trace of chlorine was absorbed. With 100 grains of aldehyde, at the end of 24 hours, no further absorption took place even at 100°. The resulting brown mass consists of two layers: a lower, darker, almost solid; and an upper, lighter colored, liquid layer. The latter is a saturated solution of hydrochloric acid and the bodies of the lower layer in water. As it was found impossible to separate these two well, the whole was submitted to distillation. A considerable quantity passed over between 90° and 100°; the thermometer then rose rapidly to 160°, and the main product distilled over between this and 180°: the temperature again rose to about 240°, but only decomposition products were obtained, and a considerable carbonaceous residue remained in the flask. By means of fractional distillation the portion boiling at 160° to 180° was quickly purified, and a body boiling at 163° to 165° was isolated, which proved to be crotonic chloral.

The specimen I have here was produced by passing perfectly dry chlorine gas over pure aldehyde (C_2H_4O)—the action is very violent and many precautions have to be taken to prevent explosion and to condense the volatile products of the reaction, and still to allow the enormous quantities of hydrochloric acid gas to escape. After a time the liquid thickens; at this stage the current of chlorine can be passed through the liquid. After another interval it becomes necessary to warm, and at last to boil the liquid through which the chlorine is passing. At length hydrochloric acid ceases to be evolved, and crude croton chloral is obtained—the process taking about 48 hours to complete. This crude body is *mainly* ordinary chloral, but mixed with a variety of other products. By fractional distillation and treatment with sulphuric acid—true croton chloral ($C_4H_3Cl_3O$)—trichlorcrotonic aldehyde is obtained. This is a dense oily liquid of peculiar odor, somewhat recalling ordinary chloral: treated with a considerable excess of warm water it hydrates and dissolves, and upon cooling, croton chloral hydrate ($C_4H_3Cl_3O,H_2O$) is deposited, but still in a crude form, most rank and offensive in flavor. It has to be purified by rather a tedious process, and is obtained, when pure, in beautiful white silvery crystals, with a sweetish melon flavor, which melt at 78° C.

From this it will be quite evident (and it is probably wise to note it) that this body does not bear any relation to croton oil, or crotonic acid, obtained therefrom, although its chemical constitution proves it to be the chlorated aldehyde of crotonic acid.

Croton chloral is the substance represented by the same term in the allyl (C_3H_5) group that chloral has in the ethyl (C_2H_5) group. Its outward appearance differs from hydrate of chloral by the salt being much lighter, and in flocculent silvery crystals—by its being almost

insoluble in cold water and very soluble in alcohol: it is soluble in hot distilled water, and rendered more easily so by the addition of 25 per cent. of pure glycerine; it is insoluble in chloroform.

It will be remembered that hydrate of chloral owes its value as a medicinal agent to the supposed elimination of chloroform when it comes in contact with the alkalies of the blood, it having been shown that by reaction with alkalies chloroform is produced. Crotonic chloral, when subject to the influence of an alkali, first forms allyl-chloroform, a trichlorated body which is rapidly decomposed into a bichlorated substance called bichlor-allylene. In a communication to the *British Medical Journal*, December 20, 1873, Dr. Liebreich says:—"Both chloroform and trichlorated substances act in the first stage upon the brain—in the second, on the spinal cord—in the third, on the heart."

Although Dr. Liebreich's theory has met with and still finds general favor, there are many medical men who think it has not any valid support, believing that chloral exercises a specific action of its own upon the organization, which is not to be reasoned out from an exclusively chemical basis.

The medicinal advantages of hydrate of croton chloral over ordinary hydrate of chloral are:—1st. In cases where hydrate of chloral is inapplicable on account of heart-disease (it does not interfere with the action of the heart). 2d. In cases of neuralgia in the district of the nervus trigeminus (it is a remarkable phenomenon that when given in small doses it produces anæsthesia of the fifth nerve, singling out one nerve, and that one alone, while the sensibility of the body generally and pulse and respiration remain unaffected). 3d. In cases where very large doses are necessary to produce sleep, here Liebreich recommends the addition of croton chloral to hydrate of chloral.

Dr. Burney Yeo, of King's College Hospital, London, &c., is making a systematic investigation of the value of this medicine, and he makes his first communication in a paper published in the *Lancet*, January 31, 1874; he administered it in six different classes of cases, and gives details of each. The results he has arrived at are, that in croton chloral we possess a remedy of remarkable efficacy in some cases of neuralgia of the branches of the nervus trigeminus, and that it also has the power of affording relief in other obstinate forms of neuralgia; that it is of use in certain cases of diffused muscular pain; that there is scarcely any remedy that is likely to prove more valuable for the relief of the distressing night cough of chronic phthisis. Its efficacy in procuring sleep seems very variable in moderate doses; its effect in purely rheumatic cases scarcely appreciable, while for hysteria it is of little or no use.

Dose.—Dr. Yeo says:—"I am satisfied that in dealing with this substance we must give an unusually wide range to the dose, for its effects vary greatly. The doses I have given varied from 1 to 10 grains. In delicate females I have found very decided effects from doses of 2 and 3 grains; in strong males a dose of 10 grains is often required to produce any appreciable effect. As may be expected, persons who have been accustomed to the use of anodyne medicines require larger doses than others."

The dose must always be proportionate to the severity and long continuance of the pain. I would advise that it should be always given in moderate and quickly repeated doses, until the amount of "tolerance in the medicine in each particular case has been discovered. In severe neuralgias, from 2 to 5 grains may be given every hour, or the smaller dose every half-hour, until 15 grains have been taken. At present I do not think it safe to go beyond this dose."

I have made several experiments with different solvents to present this medicine in a convenient form for dispensing, and before seeing Dr. Yeo's paper I found that the addition of glycerine was of great assistance in making the solution. I can fully endorse his decision. The following formulary yields the strongest solution that is permanent:—

Croton chloral hydrate.....	64 grains.
Pure glycerine.....	½ ounce.
Hot distilled water.....	1½ "

A syrup can be made containing 2 grains of croton chloral hydrate in the fluid drachm, by adding 4 ounces of simple syrup to the above solution, and the disagreeable taste may be removed by any flavoring the pharmacist sees fit to add.—*Chem. and Druggist.*

NEW SOURCE OF INDIA RUBBER.

Although it has long been known that the milky juice of the common milk-weed—*Asclepias Cornuti*—contains a proportion of caoutchouc, and though thirty years ago Shultz announced this constituent to exist in notable quantity, yet, until lately, we were not aware of any practical advantage having been taken of the fact. We understand, however, that a short time ago this subject attracted the attention of some gentlemen residing in the western portion of this province, and that, on the strength of preliminary experiments, a company, having an authorized capital of $100,000, was formed at London, Ont., for the purpose of carrying out this new and promising branch of manufacture.

So far the undertaking has not passed the experimental stage, as

the company are desirous of ascertaining the best methods of manufacture, and the probable extent of the business, before encroaching largely upon their capital. At the outset, a call of five per cent. was made, and the result of the experiment was so encouraging as to warrant a further call of five per cent. for the purpose of continuing these experiments on a more extensive and practical scale.

In a late experiment, one thousand pounds of milkweed were operated upon, and this quantity was said to yield about four per cent. of caoutchouc. The process consisted in subjecting the plant to partial decomposition, heating by steam, and then treating by maceration with coal-tar naphtha. The benzine, holding the caoutchouc in solution, was then distilled, when the rubber was finally obtained in a solid form. Of the benzine about eighty per cent. was recovered.

The rubber so obtained possesses all the ordinary characteristics of pure caoutchouc, and in its solubilities is identical with that substance. The company have, of course, protected their manufacture by patents; and we understand that in the United States, if not in Canada, patents for applying the process of vulcanization have also been obtained. The original patent does not apply exclusively to milkweed, but is extended to other caoutchouc-bearing plants, as the bamboo-berry, flax-seed, etc.

A curious fact is stated in regard to the benzine recovered by distillation from the plant mentioned. While, in its original condition, benzine is exceedingly inflammable and explosive, it is said that it loses the latter property, after distillation, and, in regard to the former, is so modified as to be easily manageable; so much so that the company intend offering it for sale as a new burning fluid. Perhaps some of our readers can account for this change of properties.—*Canadian Phar. Jour.*

PATCHOULI.

Patchouli, or Pucha-pat, is the Hindostanee name of the plant from which the perfume is obtained, which is known to botanists as *Pogostemon Patchouli*. It belongs to the order *Labiatæ*, which furnishes us with so many of our aromatic plants, such as sage, thyme, marjoram, rosemary, lavender, mint, pennyroyal, etc. The patchouli is tall and shrubby, not unlike the garden mint in habit, with broad egg-shaped, opposite leaves, about three inches long, and thick spikes of small purplish-white flowers. It is a native of Penang, Silhet, and

the Malay Peninsula, and is imported into England from Hindostan and Bengal. In India it is a very popular perfume, being generally sold in the bazaars, besides being used in tobacco for smoking, and for scenting the hair of women. It was not imported into England until 1844, when forty-six cases, some containing fifty pounds, others one hundred and ten pounds, were put up for sale at Garraway's Coffee House. The price asked was only six shillings a pound; but there were no biddings, which proves that its popularity is of but recent date. This lot was brought from New York, to which place it is said to have been taken from China. The plant flowered in Europe for the first time in the winter of 1844, in the greenhouse of a gentleman at Orleans; since then it has been in cultivation in many botanical gardens, and may usually be seen in the Economic House at Kew. Some years ago genuine Indian shawls could always be distinguished by a peculiar odor which they bore, the cause of which was long unknown. It was, however, at length discovered by the French manufacturers that this odor was due to patchouli, and they imported the plant in order to give articles of home manufacture the same perfume. The smell of patchouli may also be detected in Indian ink, in the manufacture of which it is an ingredient. The dried leaves and tops are the parts imported, and these may be bought in the markets in bundles of half a pound each. Dr. Wallich states that a native friend of his told him that the leaf is largely imported by Mogul merchants, that it is used as an ingredient in tobacco for smoking, and for scenting the hair of women, and that the essential oil is in common use among the poorer classes of the natives for imparting the peculiar fragrance of the leaf to their clothes. The sachets of patchouli which are sold in European shops consist of the herb coarsely powdered, mixed with cotton wool, folded in papers. These are simply placed in drawers and wardrobes to drive away moths and insects. The patchouli plant is in great favor with the Arabs, who use and export it more than any other nation. They take up great quantities on their annual pilgrimage, and use it chiefly in stuffing mattresses and pillows. They believe it to be very efficacious in preventing contagion and prolonging life. It is also said to protect clothing from moths. The preparation of the herb is very simple, the tops—about a foot in length—being merely gathered and dried in the sun. It must not, however, be allowed to get too dry, or the leaves will become brittle and crumble in packing. It is recorded that ill effects, such as loss of appetite and sleep, have arisen from excessive employment of patchouli as perfume; and it is very probable that such effects would be produced by it on certain constitutions. The scent is more powerful in dry than in damp places. The odor is due to a vol-

atile oil, which is contained in the leaves and stems. When distilled it is yellowish-green, with the same smell as the herb, but neither a burning nor an astringent taste. It is almost as heavy as water. A hundred-weight of the plant yields about twenty-eight ounces of oil, or, according to a specimen of the latter in the Kew Museum (where may also be seen the plant in its dried state as imported), one ounce of oil may be obtained from two hundred ounces of the herb. It is from this oil that the essence of patchouli is prepared. In the sachets of patchouli, however, the coarsely-powdered leaves are used. —*Canadian Pharm. Jour.*, from the *Journal of Applied Science*, in *Pharm. Jour. and Trans.*

THE ADULTERATION OF TEA.

THE number of *Food, Water, and Air* for November contained a report by Dr. Hassall on the "Adulteration of Tea," and particularly of Caper, a black tea, largely used for mixing with other teas in many parts of England, and especially in the northern counties. It was therein shown that of the twenty samples subjected to analysis, all but one, a sample of Foochow Caper, were adulterated. They were all faced or coated with plumbago, or black lead, and they all contained, in variable quantities, lie tea, silica, or sand, including particles of quartz and stone, and magnetic oxide of iron, sometimes in very considerable amounts. *Food, Water, and Air* for the current month contains a second report on Tea Adulteration by Dr. Hassall, the chief particulars in which may be thus summarized. The report deals chiefly, but not entirely, with green tea, but it also gives the results of analysis of samples of scented Orange Pekoe, and of a sample of "siftings." The Pekoes, like the Capers, were all coated with plumbago, and one of them on analysis was found to contain lie tea, sand and magnetic oxide of iron. The siftings were also much adulterated with silica, or sand, and there were separated from it, by means of the magnets, no less than 8.80 per cent. of magnetic oxide of iron. The eighteen samples of green tea, chiefly Gunpowder, like the Capers, were taken without selection, and like them they represent very large bulks of consignments of tea, mostly from different ships, and which have very recently, for the most part, been offered for sale and purchased. The whole of these eighteen samples, on analysis, were found to be adulterated; sixteen were faced with ferrocyanide of iron or Prussian blue, turmeric, and a white mineral powder, and the other two with the Prussian blue and the white powder only; besides which sixteen of the samples were adulterated with variable,

but often large, quantities of lie tea, silica, particles of stone and quartz and magnetic oxide of iron. The following particulars relate to only one of the samples, but the results arrived at in the case of the other samples are very similar, except that the quantities differ: "Gunpowder tea, highly magnetic, containing 35.23 per cent. of lie tea, earthy matter, partly enclosed in the folded leaves. Faced with Prussian blue, turmeric, and the white powder. Ash of the whole tea, 33.49 per cent., containg 4.47 per cent. of iron, and 19.19 per cent. of sand and stony particles. Ash of the lie tea 39.97 per cent. There was extracted by the magnet from the powdered tea 8.76 per cent. of magnetic oxide of iron."

The substances used in the facing of the tea, it was found, added from 1 to 3 per cent. to the weight of the tea, these substances being wholly extraneous to tea, and serving no useful purpose whatever therein, but helping to cover up, conceal, and to render possible certain other still more serious adulterations; and which, if not positively hurtful in themselves, must yet be looked upon as so much added dust or dirt, helping largely to the consumption of the proverbial peck of dirt. The iron present was found to consist, in all cases, of the magnetic oxide of iron, and in no instance were "iron-filings" found; and it now appears that, notwithstanding all the statements made and promulgated as to the frequent presence of iron-filings in tea, they are of rare occurrence, even if they are ever found therein. The quantities of magnetic iron, etc., actually extracted from several of the teas were as follows:—1.98, 5.57, 2.94, 8.76, 1.94, 2.85, 1.92, 3.17, 1.13, and 1.30 per cent. The quantities of silica, sand, and particles of stone and quartz found in the whole tea varied from 2.52 to 19.19 per cent., and the ash of the lie tea ranged from 13.13 to 46.01 per cent.

Of "lie tea" the following definition may be given. It is a specially fabricated article, consisting of tea-dust or the dust of leaves not tea, sand, stony particles, and often magnetic iron, mixed up into little masses or pellets by means of some adhesive material, and finally faced to imitate Caper and Gunpowder teas.

From these analyses it is therefore evident that the practice of adulterating green tea widely prevails, and is of a very shameful character. As was the case with the Caper teas reported upon by Dr. Hassall, most of the green teas now examined came from Canton, which place is the great centre and focus of the adulteration of tea. This fact is perfectly well known to all who have anything to do with tea—merchants, brokers, wholesale and retail dealers—and who, therefore, have no just right to urge in extenuation the plea of ignorance. The merchant who wants genuine tea would scarcely go to Canton for

it; and if he did go there at all, this very circumstance would alone tend to prove that what he actually required was something very different from genuine tea. Besides, the British merchant's interests in China are protected, we believe, in all cases, by the presence at the several places of manufacture and export of carefully-trained experts, on whom it would be impossible to impose; so that when such rubbish as were many of the samples here reported upon are purchased by English houses they know well what they are buying, not only from the samples themselves, but from the prices which they pay for such so-called tea.—*The Chemist and Druggist.*

Origin of Gum.—According to the researches of various German investigators, gum is the product of a retrograde metamorphosis of cellulose. Mohl (*Botanische Zeitung*, 1857, p. 33) found that the cells of the pith and the medullary rays of a species of Astragalus at first had a normal appearance, and offered a cell-wall composed of ordinary cellulose. As the plant increased in age the walls of these medullary cells underwent a change, which affected first the outer layers of each wall, and extended irregularly towards the centre of the cell. By this change the cellulose was converted into tragacanth. Wigand has studied the formation of arabin and bassorin (*Jahrbücher f. wissensch. Botanik*, 1861, iii., p. 117) in the stem of the plum. According to his researches, the bassorin is formed first, and the arabin is the result of a further metamorphosis of it. This conversion of cellulose into gum has also beerr certified to by Kützing, by Hofmeister (*Berichte d. k. sachs. Gesellschaft d. Wissensch.*, 1858), by Nägeli (*Sitzungsberichte der k. bayerischen Akad. d. Wissensch.*, 1864), and by Cramer (Nägeli and Cramer's *Pflanzenphysiologie Untersuch.*, Heft iii.). It is, without any reasonable doubt, the only method in which gum is formed; and as has been noted by the authorities mentioned, in the cactus, in the mistletoe, and in the fruit of various species of plants, probably all the mucilaginous vegetable principles are formed in this way. In the low algæ, during the formation of the motile reproductive bodies known as zoospores, the rapid conversion of the cellulose wall into a mucilaginous substance, soluble in water, always occurs.

A Reagent for Oils.—Dr. Isidor Walz writes in *The Chemist* suggesting terchloride of antimony as a reagent for oils. He first attempted to use Merck's solution of terchloride of antimony, s. g. 1.345, but found that it would not mix well with oils. He afterwards obtained good results by concentrating this solution, by means of a water-bath, to a syrupy consistence.

The experiments were made by putting two or three cubic centime-

tres of the oil into a test-tube, adding a few drops of the reagent, and shaking till a mixture was effected. In the case of animal and vegetable oils a rapid darkening generally ensued, the color turning to a reddish, greenish, or dirty brown, accompanied, generally, by a perceptible rise in temperature.

Some characteristic reactions were observed with the following:— 1. Olive oil. Formed a white emulsion, rapidly passing through light to dark green. No perceptible rise in temperature. 2. Cotton-seed oil. Formed a chocolate brown, with evolution of considerable heat. One example solidified. 3. Neat's foot oil. Formed pink, subsequently darker and thicker. The temperature rose. 4. Rosin oil. Formed purple. Of the petroleum oils, gasoline, benzine, and kerosene were tried. After shaking, two strata separated in the test-tube. A portion of the oil was resinified, the resin adhering to the sides of the tube as a thin, peculiarly colored bluish-green and purple coating. The lower stratum was of a bright-red color.

With oil of turpentine a very violent action ensued, attended by the evolution of heat and the deposition of a yellowish resinous mass.

Cosmolin.—This petroleum product, which has lately been put into the market by the oil refiners, has been made the subject of some experiments by Dr. A. W. Miller, who detailed the results at a late meeting of the American Pharmaceutical Association. (*Am. Jour. Pharm.*) From the most reliable information which the author was able to obtain it appears that the cosmoline is made by distilling crude petroleum so as to remove, successively, the gasolin, benzin, burning oils, and the lighter machine oils. The residuum is then subjected to greater heat, and its vapor is brought into contact with a jet of superheated steam, by which the last traces of light hydrocarbons are removed. A further treatment with animal charcoal renders the product less odorous. From the manner of preparation the author concludes that cosmolin is simply impure paraffin, or a mixture of paraffin and the heavy oils nearest allied to it. As cosmolin appears to possess some merits, and is certainly gaining favor with the physicians, and as the manufacturers ask an exorbitant price for it, the author proposes to form a similar substance by mixing paraffin with the so-called neutral oil. The latter product is of a density of 32° or 33°, and boils at about 500° C. Before mixing with the paraffin it may be deodorized by percolation through hot animal charcoal. One part of paraffin to three of oil give a product strongly resembling cosmolin. The author does not recommend this formula as the best that can be devised, but merely makes the suggestion for the purpose of directing inquiry to the subject.—*Canadian Phar. Jour.*

New Material for Dental Plates.—Among the novelties exhibited at the American Institute Fair is a new base for artificial teeth, the invention of a New York dentist. It consists mainly of fish-scales, which, dissolved and combined with certain fibrous and adhesive substances, form a compound that is said to be well adapted for use as dental plates. Greater strength, durability, and lightness, and freedom from all taste, are the advantages claimed for it over the materials in common use. It is capable of receiving a fine polish, and may also be readily colored to any desired tint, qualities which adapt it to a great variety of purposes outside of dentistry. It is also said to be an excellent material for waterproofing cloth.—*Popular Science Monthly*, February, 1874.—*The Clinic.*

Estimation of Glycerine in Solution.—The numerous uses to which glycerine is applied render it interesting to know the following regular data respecting it when diluted with water:—

Glycerine with 1 per cent. water has a specific gravity of 1.263; this number is diminished in the third place of decimals by 3 units for each 1 per cent. of water added, so that glycerine with 10 per cent. water weighs 1.233, with 20 per cent., 1.203, with 30 per cent. 1.173, and so on.

Camphorated Phenol.—*The London Medical Record* abstracts from an Italian medical journal the following respecting an apparently new compound, observed by Bufalini.

In making experiments with carbolic acid for the purpose of preserving animal substances from putrefaction, Bufalini met with a peculiar phenomenon when it was in contact with camphor. When about equal parts of carbolic acid and camphor are dissolved in alcohol, in about twelve or thirteen hours there arises to the surface of the solution a yellowish stratum of oily appearance; it does not mix with the liquid or with water, nor is the camphor contained in the alcohol precipitated by water. All this indicates that a chemical combination has taken place, forming a substance which Bufalini calls camphorated phenol.

In preparing this compound, Bufalini prefers the two following methods. In the first, one part of carbolic acid and two of camphor broken into small pieces are mixed in a vessel and allowed to stand for some hours, when a reddish yellow oily liquid will be formed; this is camphorated phenol, which is purified by washing with cold water. The second method consists in dissolving three parts of carbolic acid in ten of alcohol, and five of camphor in twelve of alcohol, mixing the solution in a wide-mouthed vessel, and allowing the mixture to stand for a day or two: the camphorated phenol rises to the top, and may be removed by simple decantation.

Prepared in either of these ways, camphorated phenol is a liquid of oily appearance, reddish yellow or wine-red in color, having a smell of camphor, insoluble in water, but soluble in alcohol and ether.

Regarding its therapeutic uses, the author gives the following as his conclusions:—

1. Camphorated phenol produces the same effects as carbolic acid, but is less dangerous. It may be used both externally and internally —*e.g.* in enteric fever and other infectious disorders.

2. It has the power of modifying unhealthy wounds, and of destroying the parasites which are present in certain diseases, as septicæmia, typhoid forms of fever, &c.

3. The medical use of camphorated phenol is to be preferred to that of carbolic acid, as the former does not present the disadvantages of the latter.

4. Camphorated phenol, when applied to wounds, does not irritate them, or act as a caustic, or disorganizing substance on them; and may be used in large doses, without producing symptoms of poisoning.

Influence of Light on Drugs.—The question of opaque glass vessels to protect chemicals from the influence of light has lately been conclusively settled by a Berlin apothecary, who has proved by experiment that santonin as well as silver and mercury salts have been discolored or decomposed in six weeks, while the same preparations in yellowish brown glass vessels have remained unaffected during the same period; this was also the case with carbolic acid. A solution of colchicin, after several weeks' exposure to direct sunlight, was found by H. Struve to have lost completely its chemical characters, while a specimen of the same solution kept in the dark retained its properties perfectly.

Distinction of Asiatic from European Rhubarb.—The several varieties of rhubarb are easily distinguished by the structure of the root as exhibited in its cross section. The root should be cut across in the middle with a sharp knife, the cut surface cleared of adhering particles, and moistened with a few drops of water. In the Chinese rhubarb the cross section presents light yellow rays, which pass from the middle in strongly curved lines towards the edge. These lines often appear anastomosed, and form a sort of irregular stars, the outside of which is surrounded by a larger number of rays than the inside. This distribution is seen particularly in the cambial zone, and is produced by the multiplication of the rays of the woody layer, which may be seen by means of a lens.

The intermediate space between the rays is sometimes occupied by stars, as in the Moscowitic rhubarb, only they are less numerous, less

distinct, smaller, and want the brown or black circle which characterizes the others.

In the indigenous rhubarb, rheum rhaponticum, the cross section shows a ray-like appearance, produced by alternate red and white lines, passing from the centre to the periphery; the white lines are a little broader than the red. Near the circumference there is observed a brown zone, which is quite continuous and circular in the cylindrical roots, but irregular and interrupted in the flattened pieces, yet always distinctly visible. In the Moscowitic rhubarb the cross-section shows on a white ground, yellow, sometimes anastomosing long and short wavy lines, often interrupted by systems of rays resembling stars. These stars are either elongated or circular, of different sizes, their rays being light yellow in the region of the centre, towards the outside brownish.—*Pharmacist, from Neues Jahrb. für Pharm.*

Combination of the Alkaloids with Biliary Acids.—*The Doctor* says: "We observe in *Lo Sperimentale* that Dr. Abre has noticed that when a soluble salt of a vegetable alkaloid is poured into bile, or into a solution of a biliary salt, there takes place a double action, by which these salts change their acids, the biliary acid fixes on the alkaloid, and *vice versâ* with strychnine, quinine, cinchonine, and emetine; the salt of the new formation is but slightly soluble in water, but easily soluble in excess of bile or biliary salts. With morphine, nicotine, and coneine there are obtained salts easily soluble in water. The glycocolate of strychnine and of morphine, and the taurocolate of morphine, and the glycocolate of brusine are crystalline, whilst other salts have not hitherto been seen, except in the amorphous state. The author thinks that these chemical actions of the bile on the vegetable alkaloids are most important in practice, and reminds us that the slight solubility of some of these biliary salts formed by double decomposition points to the fact well known in therapeutics—the accumulation in the liver of certain alkaloids—a fact which may guide the medicolegist in the choice of the organ which he ought to examine in cases of suspected organic poisons."

Syrup of the Bromide of Iron.—Take of bromine three troy ounces; iron (in the form of wire) 350 grains; distilled water, three fluid ounces; citrate of potash, six troy ounces or q. s.; syrup, a sufficient quantity. Put the iron, with the distilled water, in a flask, and add of the bromine two troy ounces in small proportions at a time, allowing the mixture to cool, if necessary, before the addition of each fresh portion. When the odor of bromine has disappeared, warm the mixture gently, until it assumes a green color; filter and add the re-

mainder of the bromine. Transfer the resulting solution of ferric bromide to a porcelain mortar, and add gradually, with constant trituration, citrate of potash, until the color of the mixture changes from brown to green; finally, add simple syrup to make up thirty fluid ounces. The syrup thus prepared corresponds nearly in strength with the syrup of the iodide of iron, and may be administered in doses from twenty to thirty drops. It is elegant in appearance, not disagreeable in taste, and is not incompatible with alkalies or with tannic acid.—*Med. and Surg. Reporter.*

Another Test for Morphia.—Mr. T. B. Graves presented the following test for morphia to the last meeting of the British Pharmaceutical Association, which is said to be very delicate. The alkaloid must first be separated from other substances—then heat the suspected substance with about six drops of pure sulphuric acid, and then add a very small quantity of pure perchlorate of potassium. If morphia is presented, the liquid immediately surrounding the perchlorate will at once assume a deep brown color, which will soon extend over the greater part of the acid. Warming increases the delicacy of the test. It is essential that the perchlorate shall be free from the chlorate.—*Boston Journal of Chemistry.*

A Test for Carbolic Acid.—Plugge has observed that when a solution containing carbolic acid is mixed with a solution of subnitrate of mercury, not only is the mercury reduced, but the liquid acquires an intense red color. Further experiments showed that the presence of traces of nitrous acid was essential to this reaction, and that it could be employed as a test for carbolic acid. He found that the color was still quite evident when only one sixty-thousandth part of carbolic acid was present. Still smaller quantities could be detected by this test, if carefully applied, but the amount of nitrous acid must be very small.—*Jour. of Applied Chem.* and *Med. Times.*

Is Sulphate of Morphia incompatible with Compound Spirit of Ether?—A writer in the *Druggists' Circular* says: "A short time ago I prepared the following prescription:

℞ Sulphate of morphia..... 3 grains.
Compound spirit of ether..... 2 ounces.

Mix. Dose, a teaspoonful at night.

"About two weeks afterwards the bottle was returned; there was about a quarter of an ounce of liquid left in the vial, and I noticed it was full of small crystals of morphia. I made a solution of sulphate of morphia in alcohol, and kept it two days without any change inter-

vening, when, a small quantity of ether being added, the whole sulphate of morphia crystallized out in the space of twenty-four hours. Had the patient taken the last dose, with all the crystals in it, the result would have been quite serious."

Hydrochloric Acid containing arsenic may be purified, according to Engel, by adding to it one-third to one-half of one per cent. of potassium hypophosphite, which causes a precipitation of the arsenic; when the precipitate has completely subsided, the acid is decanted and subjected in the usual manner to distillation.

The Sulphuric Acid Manufacture.—During the late meeting of the French Association for the Advancement of Science, at Lyons, M. Aime Girard gave an interesting lecture on the modern process of chemical industry. He first discoursed on sulphuric acid, and traced the growth and importance of this manufacture. Forty years ago, twenty million kilogrammes of sulphur sufficed to provide for all the sulphuric acid manufactured. Now, if sulphur were employed, two hundred and fifty millions of kilogrammes would be necessary. But sulphur has been discarded in favor of iron pyrites as the base of the manufacture. These were first experimented on for the purpose by D'Artigues, in 1793, at the time when France was cut off from all the rest of Europe. But he failed, and a similar result awaited some English experimenters about the year 1818. Ultimately at Lyons itself the desired end was accomplished by the sulphuric acid manufactory there in 1830. At this time M. Girard reckons the annual production of concentrated sulphuric acid throughout Europe does not fall short of eight hundred millions of kilogrammes. He stated that this quantity would fill a canal two metres deep, ten metres broad, and nearly thirty kilometres long.

Solubility of Arsenious Acid in Water.—Buchner reports (*Neues Rep. f. Pharm.*, xxii., 265) that amorphous arsenious acid is more soluble than the crystalline. The experiments were made by shaking with cold water, and allowing to stand for twenty-four hours, when it was found that the solubility of the amorphous variety was 1 in 108, and of the crystalline 1 in 355. Treated with boiling water and allowed to stand for twenty-four hours at 15° C., their respective solubilities were,—amorphous acid, 1 in 30 parts of water; crystalline acid, 1 in 46 parts.—*Phar. Jour. & Trans.*

Gum camphor and hydrate of chloral, when mixed together in equal proportions, are converted, in the course of a few days, into a clear, colorless liquid.

Color-Test for Chloral Hydrate.—If we agitate chloral hydrate with essence of mint, the mixture becomes rose-color, and by degrees a deep red. Boiling does not destroy this color, and sulphuric acid renders it even more intense. M. Carl Jehu says that neither the other oxygenated essences nor the simple hydrocarbons produce this reaction. —*Medical Press and Circular.*

The Indian Cinchona Bark.—At a late sale in London, part of a lot of mossed crown bark (Cinchona officinalis), the product of the plantations of the Neilgherry Hills, a range of mountains near the western coast of India, where the cinchona tree has been for several years under cultivation, brought the great price of 5*s.* 9*d.* per pound. This is about $1.40, gold rate. The whole amount disposed of on the occasion referred to was 23,646 pounds, at an average price of about seventy cents.

Effervescing Astringent Voice-Lozenges.—Clergymen, vocalists, actors, and public speakers frequently suffer from dryness of the throat in commencing to use the voice. This dryness is very generally the result of nervousness, which arrests the secretion of saliva; and attention has already been drawn to the value of the simple effervescing lozenge of Mr. Cooper, of 26 Oxford street, in allaying this trouble. Another cause, however, and one often found in conjunction with the foregoing, is relaxation of the uvula and mucous membrane of the pharynx; and this condition is always more or less present in the case of those who are constantly using the voice. For its relief an astringent is required; but most astringent lozenges produce dryness. The combination, however, of an astringent and effervescing saline, while bracing the mucous membrane, does not cause dryness, but, on the other hand, promotes a free secretion of the saliva. Mr. Cooper has prepared some lozenges for me of this character, using the gum of eucalyptus as the astringent. By the addition of a small amount of cinnamon and clove, he has made it agreeable in taste, while it is quite free from any irritant stimulant, so frequently found in "voice lozenges." Having prescribed these lozenges for some months with very considerable success, I am induced to think they may be found a useful addition to our remedies for some of the slighter throat-troubles for which one is constantly consulted in this climate.—Browne: *Brit. Med. Journ.*, Jan. 24, 1874.

Fluid Extract of Sumach Berries.—The berries of the sumach, containing a considerable quantity of malic as well as tannic acid, furnish one of the most agreeable of astringents for mouth-washes, gargles, etc. The following formula, following closely the

pharmacopœia process for astringent fluid extracts, is offered by Joseph P. Remington (*Am. Jour. Pharm.*), and is said to yield an elegant preparation, of a rich red color, representing well the virtues of the berries:

℞. Sumach berries, in moderately fine powder.... ℥ xvi.
Glycerine..... fl ℥ iv.
Alcohol, water, of each a sufficient quantity.

Mix half a pint of alcohol, three fluid ounces of glycerine, and five fluid ounces of water, and having moistened the powder with four fluid ounces of the mixture, pack in a suitable percolator, pour on the remainder of the menstruum, close the percolator and allow the powder to macerate for four days; then open the percolator and continue the percolation till twenty-four fluid ounces have been obtained. Of this reserve the first fourteen fluid ounces, and evaporate the remainder to two fluid ounces, mix with the reserved portion and filter if necessary.

Preservation of Vegetable Powders.—Mohr's method of preserving vegetable drugs consisted in placing in the drawers with them perforated tin boxes containing quick-lime. Louis Cornelis, pharmacist at Diest, proposes a modification of this plan, which is especially adapted to the preservation of powdered drugs. The bottles in which the drugs are kept are fitted with large hollow stoppers, which are filled with fragments of quick-lime. The large opening through which the lime is introduced is secured by tying over it a double thickness of linen and filtering paper.—*Amer. Journ. of Pharm., Ibid.*

PREPARATION OF CAVIARE IN RUSSIA.

All of our readers have heard of caviare as a delicacy of Russian origin, only to be enjoyed by the rich; but many of them may not be aware that it is simply the roe of one or more species of sturgeon (sometimes indeed of other fish) prepared in a particular manner. All the rivers and lakes of America abound with sturgeon, consisting of several different species, some of them of enormous dimensions; and although in some sections those fish are marketed and consumed in considerable numbers, by far the greater proportion of those captured are either returned to the water or wasted; no special efforts being made to capture them. Quite recently, however, some firms on Lake Erie have undertaken the utilization of the sturgeon, receiving immense numbers from various places on the lakes. They smoke the fish, which is cut up into strips, and prepare the roe.

There are many peculiarities connected with the treatment of the sturgeon roes, and their conversion into caviare; and it may be of some service to those interested in the trade to know how this is prepared in the White Sea and the Caspian, the headquarters of the business. According to Mr. Alexander Schultz, two kinds are made; one fresh or grained, and the other the hard or pressed. In both cases, the roes are placed upon a web or network, with narrow meshes, forming a kind of sieve, stretched over a wooden hoop. (Possibly a fine wire gauze would answer a still better purpose.) The fish eggs are then forced through the meshes by pressing the whole mass lightly, until nothing is left on the upper surface but the cellular tissue, the fat and tendons. The eggs fall into a wooden receptacle placed beneath, and are next sprinkled with very fine salt of the best quality, the mass being stirred with a large wooden fork having eight or ten teeth. The quantity of salt necessarily varies, according to the season from 5 to $1\frac{3}{4}$; that is to say, in the month of August, three to five pounds of salt are used to the poud (36 pounds) of roes, and $1\frac{3}{4}$ to $2\frac{1}{2}$ in the winter. The less the caviare is salted the more it is esteemed.

At first the eggs, mixed with salt, exhibit a pasty appearance when stirred; but after each grain is thoroughly impregnated with the salt the mass swells, and when stirred there is a slight rustling, similar to what would be the case in the stirring of fine particles of glass. This is a sign that the preparation is complete. The caviare is then placed in casks of linden wood, which imparts no unpleasant taste, as might be the case with most other materials.

To prepare the pressed caviare, a tub half filled with pickle, more or less strong with salt, according to the temperature of the season, is placed under the network. To secure a thorough impregnation of the eggs by the pickle, the mass is stirred with a wooden fork, turning it always from the same side. Then the eggs are strained out, and when thoroughly drained a quantity of about 100 pounds is placed in a sack, and subjected to the action of a press, in order to remove all of the pickle, and convert the whole into a compact mass, as curd is converted into cheese. In thus preparing the caviare a number of the eggs are broken, and a portion of the contents runs off with the pickle, so that for each poud there is a loss of ten to twelve pounds. After removing the pressed caviare from the box it is placed in casks, holding about 30 pouds, the interior of which is lined with napkin cloth, on which account, in commerce, this always bears the name of "napkin caviare." The better quality of the pressed caviare, that is to say, that which has been less mashed and salted, is placed in narrow, cylindrical cloth bags, and it is then called bag caviare. Caviare is also transported in boxes of tin, hermetically sealed. Fresh caviare is always preferred

to the pressed, but is more expensive. Thus, at Astrachan, fresh caviare is worth from 30 to 35 roubles the poud, while the pressed is worth only 24. It is much more profitable to prepare the green caviare than the pressed, as it brings a better price, takes less salt, and requires less labor. There are exported every year from Astrachan about 11,000 pounds of caviare, which goes especially to Berlin, Dresden, and Vienna.

In commerce, the caviare from the roe of the Belouga Sturgeon, (*Acipenser huso*), is more esteemed than that from the *A. stellatus*. The best of all is that of the Sterlet (*A. ruthenus*); but this scarcely enters into commerce. The different kinds of sturgeon have roes differing in size, this depending upon the quality of the fish, the season, and the particular place of capture. The roes of sturgeon which are taken in the sea between the 8th of July and the 15th of August, are allowed to remain only a few hours in the pickle, and they are then removed, and placed, without being pressed, in casks of 5 to 10 pouds. If, on touching the roes, they are found to be tender, and the ovaries have already begun to decay, the roe, ovaries and all, are thrown into the pickle, so that the whole may be impregnated with salt. This is the most inferior quality, and is shipped in casks of 27 pouds each, and is worth only three or four roubles per poud. This is known as summer caviare. The total amount of caviare obtained in the Caspian Sea fisheries amounts in one year to 139,000 pouds (about 5,020,000 pounds), worth 1,390,000 roubles, or $1,103,000.

Preparation of Koumiss.—H. and N. Schultz, of Berlin, give the following formula. Unskimmed cows' milk is mixed with a sufficient amount of sugar of milk to produce in the course of the subsequent fermentation in closed vessels a carbonic acid gas pressure of four atmospheres. Fermentation is induced by the addition of brewer's yeast, which has been thoroughly washed. The operation is commenced in open tanks, in which the mixture must be frequently stirred. One-half of the casein, which is separated, is to be skimmed off. While the fermentation is actively progressing, the preparation is drawn off into champagne-bottles, the corks of which must be securely tied down by string or wire. They must then be removed to a cool locality, so that the fermentation can be properly completed. Three varieties of koumiss are prepared, which differ in the amount of carbonic acid gas with which they are impregnated; they result from varying the proportion of sugar of milk, which is originally added.

C. Schwalbe makes koumiss from condensed milk in the following manner: 100 c.c. are dissolved in a small amount of cold water; 1 gramme of lactic acid and ½ gramme of rum are added, and the mix-

ture is diluted with sufficient water to make it measure 1,000 to 2,500 c.c. This preparation is put into a Liebig's bottle and charged with carbonic acid gas. The bottle is to be kept in a warm room, and to be examined after three or four days. When there is an active evolution of froth, and when the curd is of a fine, granular consistence, the koumiss is in the proper condition. It can then be kept for about eight days.—*Deutsche Industriezeitung*, p. 438, *Chemisches Centralblatt*, p. 568, and *Philadelphia Med. Times.*

Butter and its Adulteration.—The adulteration of butter is a question that has been occupying much public attention, and several articles and letters on the subject have appeared in the daily papers; but they contain very little information of real value to the public in assisting them to discriminate between pure and adulterated butters. In a recent letter to the *London Times*, Dr. C. Meymott Tidy, public analyst for Islington, says, that in his opinion, butter made from *fresh* (sweet) cream, is infinitely to be preferred to that made from *sour* cream. In this opinion most practical people will agree. He then goes on to say that, as a rule, "cheap butters are far more closely related to tallow, and lard, and palm oil than they are to cream, sour or sweet;" and that samples of butter have been submitted to him in which there was not, he is sure, a trace of butter. Now, this is a sad state of things, and we are sorry to say that we believe Dr. Tidy's opinions are only too truthful. We could have wished that he had made his letter of some practical value by adding one or two simple tests, by which the public might have been able to detect the trash sold as butter, but which is, in reality, "purified tallow;" but it is doubtful whether analysts themselves know of any ready means of distinguishing between the fats of pure butter and other animal fats. A city firm recently sent a sample of Dutch butter to a public analyst—which they knew to be adulterated—and received from him a certificate that it was of very fine quality, though it wanted the "rich aroma of pure Aylesbury butter." If public analysts are unable, by means of their chemical tests, to determine whether a sample of butter is pure or manufactured, it would be more satisfactory if they would declare their incompetence, as the public would then submit the article they are buying to the best test that can be applied—viz., their unaided smell and taste.—*London Med. Record.*

Cheese from Tallow.—Since the genius got a patent for making butter from tallow, it seems attention has been turned to manufacturing grease into cheese. *Iron*, an English journal, says that a Surrey gentleman has patented a process for making "cheese of rich quality'

from skim-milk and tallow. The two are beaten into an emulsion, then treated with rennet in the usual way, and the outcome is fine Cheshire. The plan is not new. This is the first time it has been made "patent" to the public.—*Exchange.*

A New Ration Biscuit.—A formidable rival to the German Erbswurst has proved its virtues in the Russian Expedition to Khiva. It is a biscuit composed one-third of rye flour, one-third of beef reduced to powder, and one-third of sauerkraut also reduced to powder. Great relish for the food and excellent health from its use have been characteristic of the soldiers throughout the campaign.—*The Lancet*, Jan. 3d.

Composition of Milk at Various Times of the Day.—Professor Boedeker has analyzed the milk of a healthy cow at various times of the day, with the view of determining the changes in the relative amount of its constituents. He found that the solids of the evening's milk (13 per cent.) exceeded those of the morning's milk (10 per cent.), while the water contained in the fluid was diminished.

The fatty matters gradually increase as the day progresses: in the morning they amount to 2.17 per cent., at noon to 2.63 per cent., and in the evening to 5.42 per cent.; so that if 16 oz. of morning's milk will yield nearly half an ounce of butter, about double this quantity can be obtained from the evening's milk. The casein is also increased in the evening's milk from 2.24 to 2.70 per cent.; but the albumen is diminished from 0.44 per cent. to 0.31 per cent. Sugar is least abundant at midnight (4.19 per cent.) and most plentiful at noon (4.72 per cent). The percentage of the salts undergoes almost no change at any time of the day.

On Keeping Hydrocyanic Acid.—At a recent meeting of the British Pharm. Association, Mr. F. Baden Burger remarked that the uncertain strength of hydrocyanic acid as met with in pharmacy has formed the subject of frequent lamentation from pharmacists and medical men for many years past. To remedy this it has generally been suggested to use a metallic cyanide as a substitute. Hydrocyanic acid is, however, a remedy not likely to disappear from physicians' prescriptions very suddenly, and I therefore venture to bring before the Society a little contrivance for storing and dispensing small quantities of it, which I believe will be found useful. It consists, in fact, of a bottle from which the contents may be removed without taking out the stopper. A small glass tube, shaped like the barrel of an ordinary half-ounce syringe, is drawn out to a rather long, fine point at one end and sealed in the flame of a spirit-lamp or Bunsen's burner;

it is then filled with the acid and a piece of vulcanized sheet india-rubber tied *tightly* over the mouth. When required for use, the point is scratched with a file and broken off; by pressing the finger on the india-rubber diaphragm any required quantity of acid can be taken out, only the same bulk of air entering the tube when the pressure is removed. It is then placed, with its point below the surface of mercury, in a little upright glass vessel.

By this method the only loss of HCN is the small quantity which diffuses in the air contained in the tube as it is gradually emptied, and is not sufficient to be of practical importance. It is of course necessary to bind the india-rubber tightly over the mouth of the tube, which should be of yellow glass, or varnished by a dip in solution of shellac colored with coralline.

Vulcanized india-rubber must be used, as the HCN diffuses rapidly through pure india-rubber.

Not the slightest deterioration was found to have occurred in acid so kept for fourteen days. These tubes can be filled and sent out by wholesale houses instead of bottles, and can be as easily refilled.

Mr. Umney thought the suggested contrivance would not meet with much favor with wholesale houses, on account of the difficulty in packing it safely.

Professor Attfield said another objection occurred to him, viz.: that the mercury in which the point of the tube was placed might get upset; and if it were not replaced, the risk of alteration of the acid might be greater than before. This, however, might be avoided if, instead of placing the vessel in a cup of mercury, an india-rubber cap were placed over a thicker quilled extremity. The tube might also be graduated with five-minim or ten-minim marks.—*Chemist and Druggist.*

Areca Nut.—As it seems that areca nut is likely to come in for official recognition, and as there has been a question raised as to its method of action, mechanical or therapeutic, the following note, contributed by Mr. Charles Andrews, M.P.S., to the *Pharmaceutical Journal*, is useful. Mr. Andrews states his experience of its use in India, acquired during a residence in the Bombay Presidency, where he has frequently known it used by the natives with very good effect as an anthelmintic.

The natives pick it off the tree and *grate* it on an ordinary nutmeg grater. About a teaspoonful is administered, after the patient has fasted 12 to 14 hours, either made up into a bolus with ghee (clarified butter), or floating on milk, the latter being the favorite method. It generally acts (without any other medicine being given) in about an hour after administration, and is efficacious for round as well as tape-

worms. It is used both for the human subject and dogs in the same manner and dose.

His opinion is that it is much more useful given *grated* than in *fine* powder. A celebrated "dog powder," largely sold, he believes to consist of nothing but this areca-nut powder.—*Ibid.*

Crystallized Glycerine.—Among the chemical curiosities of the Vienna Exhibition were some samples of crystallized glycerine, exhibited by Messrs. Sarg's, Sons & Co., of the Liesing Works, near Vienna. A note on this by Mr. A. H. Mason, F.C.S., was read lately before the Liverpool Chemists' Association, and is interesting. Mr. Mason said:

In a paper which I had the honor to read before you last session on glycerine, I stated, taking high authority, that glycerine was uncrystallizable. This statement I must correct, and in substantiation call your attention to the specimen of crystallized glycerine which is presented to your museum. My attention was first drawn to this in a report published in the "Chemist and Druggist," July, 1873, on the articles exhibited in the Vienna Exhibition, which stated that "Sarg exhibited several glass vessels filled with some beautiful crystals of glycerine." The statement added—"Like phenoline, benzoline, and many other organic combinations, glycerine only crystallizes in a state of perfect purity, and the minutest foreign matter deprives it of this property; once in a solid state it will only melt in a high summer temperature. Under certain conditions the crystals attain a size which allows their angles to be measured." I have obtained a specimen of this glycerine from Messrs. Schneider & Co., of London, which was supplied in a narrow-mouthed bottle, labelled, "*Krystallisirtes Glycerin. Patent F. A. Sarg's, Sohn & Co.*" The result of my examination convinced me that absolute purity was not necessary to bring the specimen to the crystalline form in which it now exists. Being very hygroscopic, atmospheric influence of mean temperature is quite sufficient to liquefy it, and, once liquid, exposure to intense cold will not cause it to congeal. The peculiar mousey odor is present. Contact with calcic oxalate produces slight turbidity, and heated with sulphuric acid and absolute alcohol there is discoloration. The method of production, being patented, is a secret; it commands a fancy price. Its usefulness is questionable; as a chemical curiosity it is interesting. —*Ibid.*

Protection of Hypodermic Solutions from Change by Keeping.—Dr. E. R. Squibb states, as the result of numerous experiments, that solutions of morphia and atropia for hypodermic use may

be effectually preserved from alteration with age by the addition of a minute quantity of carbolic acid. These solutions should be made in every case with distilled water, and carefully filtered. Otherwise they are still liable to change, even if the proportion of carbolic acid is very greatly increased. The quantity required to afford certain protection, under these precautions, is about one-seventh of one per cent. Practically, it is recommended to employ a somewhat larger proportion, viz., one-sixth of one per cent.—a quantity which does not impart to the solution any irritating quality, nor interfere in the slightest degree with its medicinal activity. For the preparation of these protected solutions, a five per cent. solution of carbolic acid, made with distilled water, and filtered, should be kept on hand. In preparing the hypodermic solutions, fifteen minims of this solution should be employed to each fluid ounce of the finished preparation.

Note on Acid. Sulph. Aromat.—Mr. Ernest C. Saunders has made several experiments to ascertain some way of avoiding the deposit formed in the acid on standing, and has found the following alteration very satisfactory, as the acid preserves the smell and taste of the officinal preparation entirely. The alteration consists merely in percolating the spices with a mixture of one part water with two of alcohol, in place of strong alcohol only. The dilution has the effect of partly preventing the solution of the resin present, and also allows some of the gum in the ginger to be dissolved. On mixing the percolate with the mixed acid and alcohol, and standing for a week, a copious deposit is obtained, from which the liquid is cleared by filtering. A sample of the acid made in this way, kept for eight months, showed no further change. The acid is slightly lighter in color than the officinal, but differs in no other respect.

Oleic Acid.—The same authority says oleic acid can be procured from white Castile soap more easily and better than from any other source that the writer is acquainted with. Pure white Castile soap contains, according to the U. S. Dispensatory, 59 per cent. of oleic acid, and the author has obtained from a very fine sample as much as 65 per cent. The crude acid is easily obtained on boiling one pound of the soap, cut small, with seven and a half ounces of tartaric acid, till the whole separates into two clear layers, the upper of which is the crude acid. It consists of about 87 per cent. of oleic acid, the remainder being chiefly stearic acid, with a trace of palmitic acid. The watery liquid contains the soda of the soap in the form of acid tartrate, $NaHC_4A_4O_6$. The upper layer should be decanted while still warm, and on cooling becomes about the consistency of lard. It is freely

soluble in alcohol and ether, and will readily dissolve precipitated oxide of mercury without further purification, the five per cent. solution being very little more solid than the acid itself, and being rapidly absorbed by the skin. The stearic acid can be removed by digesting the mixed acids with half their weight of pure litharge, at a low heat, dissolving in twice the bulk of ether, filtering, decomposing the oleate of lead with hydrochloric acid, again decanting and filtering, and finally distilling off the ether. The resulting pure oleic acid has very little smell, is of a straw color, and will very readily dissolve the oxide of mercury, almost in the cold.

Improvement in the Preparation of Phosphorated Resin.—Mr. A. C. Abraham (*Pharm. Jour. and Trans.*) alludes to certain objections to the mode of preparation proposed by Mr. Gerrard. The process involves the application of a strong heat, giving rise to danger and inconvenience as well as having the effect of deteriorating the product by the oxidation of the phosphorus, or by its conversion into the amorphous form. To obviate these disadvantages the writer proposes to use some resin fusible below the boiling-point of water, and also sufficiently heavy to sink in that liquid. Balsam of tolu is suggested as answering both requirements, and by its use the combination can be effected entirely under water. Experiment has shown that four grains of phosphorus are perfectly dissolved by ninety-six grains of washed tolu, if melted together under water and well stirred. The preparation so made, when examined microscopically, does not show any particles of undissolved phosphorus, and when seen in the dark, and rubbed between the fingers, it gives a perfectly *equally distributed* light. This preparation may, therefore, be formed into pills, with every confidence in the equal distribution and activity of the phosphorus.—*Can. Phar. Jour.*

Adulteration of Carrageen Moss.—J. Dalmon (*Phar. Jour. and Trans.* from *Repert. de Pharm.*) reports the adulteration of carrageen, *Fucus crispus*, by *gigartina acicularis*, some samples showing an admixture of forty per cent. of the latter. The *gigartina* may be distinguished by its cylindrical, cartilaginous, subdichotomous, flexuous fronds, with acuminate and most frequently bifurcated branches, sending out lateral, horizontal spiniform branchlets. A light brown tint is retained by the pedicels, which gives to the mass a less uniform color than that ordinarily exhibited by carrageen. The jelly yielded by the *gigartina* is much inferior to that from carrageen.—*Ibid.*

Are Pepsin and Pancreatine Incompatible?—This question is answered by Mr. George Luis (*Pharmacist and Chemical Record*), who, as a result of several experiments, states it as his belief that these substances can be used in combination, provided the mixture is not rendered strongly acid.—*Ibid.*

Color of Oil of Cajaput.—M. Histed (*Neues Jahrb. f. Pharm.* in *Pharmacist and Chemical Record*) confirms the conclusions of Wiggers that the green coloration of cajaput oil is due to traces of copper derived formerly from the copper vessels in which the oil was transported; but, now the oil is shipped in glass bottles, the coloration must be intentional.—*Ibid.*

A Lead and Zinc Battery.—A new form of galvanic battery invented by Pierlot is thus described in *Comptes Rendus:* In a suitable glass or earthenware vessel is placed about a pound of chloride of lead, into which is inserted a plate of lead with a varnished lead wire attached. In the other part of the vessel is inserted an amalgamated zinc plate about nine millimetres thick, covered with a bag of parchment paper. Every two or three months water is added. The current is said to be strong and constant.—*Journal of Applied Chemist.*

OZONE—A NEW AND CORRECT METHOD OF SUPPLY.

The use of ozone as a disinfectant in hospital wards and public buildings has amply demonstrated its virtue as a purifier of air exhausted by breathing or poisoned with emanations from corrupt or decaying organic matter. The only bar to its more extended use has been the lack of a simple and trustworthy means of generating it, safely and continuously, by a process not involving scientific skill or costly materials.

The latest means suggested certainly bears the palm for simplicity, cheapness, and accessibility to all. It consists simply in the exposure to atmospheric action of common phosphorus matches moistened by water, the alleged result being the production of nitrate of ammonia and ozone—both active purifiers of air.

Knowing the efficiency of moistened phosphorus as a generator of ozone, the author of the match method, Mr. Sigismund Beer, of this city, set out one day to procure a quantity of that substance, to use in

sweetening the atmosphere of a room whose musty smell had successfully resisted the power of ordinary disinfectants. Failing to find any phosphorus at the drug-stores in his neighborhood, it occurred to Mr. Beer that possibly lucifer matches might furnish the needed element in a condition suited to his purpose. He tried them, dipping them into warm water for a few moments, then suspending them in the obnoxious room. Their effect was prompt and salutary; and thereafter, by continuing their use, he was able to enjoy "the luxury of pure and refreshing air," notwithstanding the room was in the basement of an old cellarless house on made land, the air of which was further tainted by a quantity of mouldy books and papers. In a paper lately read before the Polytechnic branch of the American Institute, Mr. Beer narrates a number of subsequent experiments with the same simple materials, the success of which convinced him that he had made a veritable discovery of great importance.

Touching the safety of the method he proposes, Mr. Beer is confident that no overcharging of the air with ozone or other injurious matter may be apprehended from the use of matches in the manner he describes. Both the ozone and the nitrate of ammonia are generated slowly, and their force is swiftly spent by combination with the impurities they are intended to remove. It is obvious that the supply of the purifying agents can be easily regulated by increasing or diminishing the number of active matches. In the room above mentioned, six bundles of matches were kept active—some near the ceiling, others near the floor—by daily watering.

In another instance a single bunch is mentioned as having sufficed for quickly purifying the air of a room in which several adults and children were lying sick; but in this case the air was fanned against the matches while they were carried about the room, thus heightening their activity. How long a match retains its ozonizing power Mr. Beer does not say. In conclusion, Mr. Beer claims that, whatever may be said of his theory of match action, the fact is indisputable that, in the use of matches as he suggests, we have a handy, wholesome, and inexpensive means of freeing our houses from noxious exhalations and the long train of evils attendant on the prevalence of bad air. The matter is easily tested, and certainly well worth trying.—*Scientific American.*

Ozone in the Sick-room.—A German writer suggests, as an easy means of ozonizing the air of a sick-room, the use of a powder composed of peroxide of manganese, permanganate of potash, and oxalic acid, which has the property of giving out, when in contact with water, an abundant quantity of ozone. For a chamber of medium size, he uses

about two tablespoonfuls of the powder, on which he pours from one to one and a half tablespoonfuls of water every two hours. In this way the quantity of ozone produced is exactly what is wanted; the presence of a larger quantity in the air would occasion cough. All metals except gold and platinum must be removed from the room on account of the oxidizing effect of the ozone.—*Boston Jour. of Chem.*

Solution of Tar.—Mr. Henrotte gives the following formula in the *Repertoire de Pharmacie* for a preparation similar to the popular *Goudron Guyot*:—

Norwegian Tar	300	grammes.
Bicarbonate of Soda	250	"
Rain-water	500	"

Allow the mixture to react in the cold for two hours, then gently boil it for a quarter of an hour, stirring continually. Remove from the fire and add of boiling rain-water 9,500 grammes. Agitate briskly for a few minutes, then let the mixture cool. After cooling, let it be well shaken on several occasions. Finally, let it clear itself by deposition of any dissolved tar.

The first boiling produces a sort of tar-soap in the form of a soft, clear-yellow, and homogeneous mass. To a great extent this soap becomes perfectly dissolved in the water and imparts to it a brown color. It is important that the boiling should not be long continued, lest it should decompose the tar, and it is further desirable that the mixture should be allowed three or four days, or even longer, to clear itself, as it thereby acquires more aromatic properties.—*Chemist and Druggist.*

Improvement in Sponge Tents.—Mr Lawson Tait says that by charging sponge tents with a five *per cent.* solution of oil of cloves, they may be allowed to remain twenty-four hours in the uterus without becoming in the least degree offensive.—*Med. Times and Gazette.*

Poisoning by Tin.—Until recently tin has not been included among poisonous substances, or if so to but a slight degree. The following fact, reported in Algeria, would seem to oppose this common belief.

In July last a native of Bou-Nedfa, near Bildah, died after declaring to his parents that he had been poisoned by his wife. The materials contained in his stomach and intestines were analyzed, also portions of the viscera and other tissues. In both cases tin was discovered to be present.

In the lodging of his widow two pieces of nearly pure tin were found, together with a file and a glazed earthenware dish, the latter

containing a whitish substance, which proved to be meal containing a little tin.

In the analysis M. Pelissie failed to detect the least trace of lead, and not satisfied with the discovery of the salts of tin, he reduced them to metallic state.—*Le Bordau Médical.*

TOXICOLOGY.

THE OPIUM HABIT.

Opium-eating is seldom spoken of by lecturers in our medical schools. In medical journals, also, the subject is rarely mentioned; and, in consequence of the adroitness of the votaries of opium in concealing a bad habit, the physician in private practice scarcely ever confronts this vice. There are few, therefore, who are familiar with the subject—one of much importance, now that the use of opium as a stimulant is greatly on the increase in the United States. I have noticed its abuse by physicians, female-teachers, servant-girls, and even by farmers' wives.

Seven cases have come under my observation; and I relate the following, a typical case, where, as in the majority of instances, opium was used exclusively as a stimulant.

Early in the year 1867, a gentleman, 28 years of age, in good health, by profession a civil-engineer, began the regular use of opium as a stimulant, having for a year before that time merely tampered with it on occasions of despondency. Beginning with gum-opium, he occasionally rolled up a small piece and swallowed it; but, experiencing unpleasant digestive derangements, constipation, and itching of the skin from the use of opium in that form, he employed the salts of morphia. He carried the sulphate in a little vial and used from time to time the indefinite quantity he found necessary to calm his mind. Thus he became addicted to a stimulant, the abuse of which became indispensable to a comfortable existence.

As an antidote to whiskey he found it perfect. It soon ceased to disturb digestion. It did not flush his face or proclaim itself in the breath. His bowels were not inconveniently constipated, being evacuated about twice a week, and he could retain his urine comfortably for twenty-four hours. His muscular system was steady, he slept well, his mind was calm and satisfied under all circumstances, and he experienced a strange and agreeable buoyancy, a self-reliance, and a nonchalant happiness all the time.

When I first saw him he had used morphia for four years, had experi-

enced its pernicious effects, and had made several attempts to abandon the habit. At this time he found that, notwithstanding a considerable retrenchment of his daily allowance, he was using eight grains of the sulphate of morphia per diem, or one drachm per week.

He was sallow, with hands without moisture, and his finger-nails were brittle, his eyes were dull, his mouth and lips dry, the secretions were scanty, the bowels constipated, and he was occasionally subject to temporary but distressing bilious diarrhœa. In addition to this, his hair was dry and husky, the skin inactive and itchy, and he had inveterate pityriasis of the scalp.

In disposition he was inert, lazy, forgetful, disposed to sleep, which was uncertain and troubled by dreams, in which he started up in bed, his mind a prey to vague terrors. On this account he often used chloral at night, which, though it produced sleep, exacted an equal number of nights of wakefulness when he discontinued its use. He could not take stimulants for some days after chloral, on account of an intense erythematous blush of the skin which invariably followed, and caused a violent beating of the carotids against his pillow that effectually banished sleep. The sexual function was impaired; and finally he was anxious, nervous, and desirous of freeing himself from the power of opium.

Now, what are we to do for such a case? Diminish very gradually and circumspectly the amount of opium used until the system can do without it? This is quite impracticable, if not impossible, unless the patient is under restraint. Shall we suddenly suspend the poison and sustain the system? This treatment has been employed with success, but it results in great suffering, is also dangerous, and, according to my observation, will not do for bad cases, which are so debilitated after recovery from opium-poisoning that they fall easy victims to pneumonia and kindred affections.

With reference, however, to the train of symptoms to be expected when from any cause opium is suddenly withheld from a person accustomed to its use, I quote from Dr. Flemming, of Birmingham, England, whose method of treatment I have followed, and who treated his cases by suddenly suspending the drug, as recommended by Dr. Christison in 1850:

"Having put a stop to the indulgence, you must be prepared for a great increase in the mental as well as in the bodily suffering of the patient. He is a prey to intense depression; he is sleepless, excessively irritable, full of alarms as to his condition, and will—unless he be a man of unusual strength of mind—pitifully implore you to allow him an opiate to relieve his distress, declaring, if refused, that his life is in danger. At the same time he suffers much from pains in various

parts of the body, but especially in the stomach and bowels; the pulse rises much in frequency—I have known it as high as 120; the tongue coated with white fur; there is unceasing thirst, and a total loss of appetite; the bowels, which were formerly confined, are now much relaxed, and a state of diarrhœa is established; the skin softens, and finally sweat pours from the surface."

Under these circumstances Dr. Flemming employs a combination of lupuline with phosphoric acid,—a nauseous dose, but comforting and soothing to the patient; lessening the force of his suffering, and making it tolerable in some cases within a week.

℞. Acidi phosphorici diluti..... ʒ x.
Tr. lupulinæ ad..... ʒ xxx.—M.

S.—ʒ ij. every four hours, one hour before food, in a wineglass of water.

With regard to diet, the patient is directed to have at first milk and beef-tea alternately every four hours until the appetite improves, when a stronger diet may be substituted. At night, if wakefulness is protracted, tinct. cannabis ♏xxx. with spts. ether is employed with happy effects. In this way the patient and opium may be violently separated, but too often he yields again to its superior power before he can forget its blandishments. The will is too weak, the power of habit too strong.

So far as I am aware, no direct antidote to opium which is powerful enough for a case of this kind is known, but it has always appeared to me that there might be some *substitute* which by combination with other remedies, by a diminution of one and an increase of another, might *insensibly* supplant opium in the system. With this view I have made experiments with different drugs, with nostrums, and with proprietary medicines of several kinds. As the result of my experience, I venture to state finally with regard to some of the latter that the terms I have mentioned appear to be realized. If this is so, the fact is probably familiar to others, who ought to give an opinion on so important a subject.—W. D. Martins, M.D., *Philad. Med. Times.*

Hornet-Sting.—In addition to the local irritation produced by the stings of bees, hornets, and wasps, severe and even fatal results are sometimes known to ensue. In a case observed by Dr. R. M. Cooper, a lady, having accidentally approached a hornet's nest, was stung six times upon the crown of the head, through a sun-bonnet, and four times on the back of the neck. She suffered severely at the time from the stings, and was found by the physician, an hour afterwards, in a cold, collapsed state, with pulse thread-like and almost imperceptible. Though her condition appeared at first to be a criti-

cal one, under the influence of active stimulants she eventually rallied. Upon the following day an intense itching was experienced over her whole body, which was found to be the seat of an erythematous eruption. This eruption disappeared at the end of thirty-six hours.—*Transactions of New Jersey Medical Society.—Medical Times.*

Poisonous Univalves.—Seven individuals who had eaten snails at dinner were, so says the *Montpellier Médical,* affected with sickness, diarrhœa, giddiness, fever, etc. No doubt could be entertained as to the cause of the poisoning. The seven persons had all eaten of the snails, whereas they had not all eaten of the other dishes served up at the dinner. The pan in which the snails had been cooked was in perfect condition, and had been freshly tinned. The poisoning, therefore, took place through the snails themselves. It is well known that they often feed on poisonous plants, such as belladonna, digitalis, and hemlock, and on the fields from which the snails had been gathered were found boxwood, euphorbia, and prickwood. It is on account of this that snails gathered to be eaten are generally submitted to a few days' previous fasting.—*Food Journal.*

Resuscitation from Chloroform-Narcosis.—(*The New Orleans Med. and Surg. Journal,* Nov., 1873). In the course of an extended experience in the administration of chloroform, it has happened three times to Dr. M. Schuppert that, to all appearances, the narcotized subject died,—that is, respiration ceased, the heart stopped beating, and muscular contractility became extinct. The method he adopted for resuscitating these patients consisted in reversing the body, either by hanging them up by the feet or laying them over a bed or table so that the greater part of the body with the head hung down. In that position artificial respiration was also tried. In one case five minutes elapsed before there was a natural inhalation. All of them recovered. Dr. Schuppert believes that in cases of death from chloroform the primary cause of the cessation of the respiration and circulation rests in anæmia of the brain, and not in impregnation of the blood with carbonic acid.

Detection of Metallic Poisons.—J. L. Verryken criticizes the methods generally in use for the destruction of organic matter, preparatory to the research for metallic poisons, especially that of Fresenius and Babo (by means of hydrochloric acid and potassium chlorate). A portion of the poison, he says, is liable to be lost by the formation of volatile chlorides; the resulting solution is not perfectly colorless; the precipitates formed in this solution by sul-

phuretted hydrogen and by sulphide of ammonium always contain organic sulphur compounds, from which it is often difficult to separate the metallic sulphides.

He recommends to destroy the organic matter by heating in an ignition tube, in a current of pure oxygen gas. The apparatus used is similar to that employed for elementary organic analysis. In following this method a smaller quantity of material is necessary, there is absolutely no loss of substance, and the process commends itself from its extreme simplicity. He has demonstrated the excellence of his method by experiments, in which he detected copper, mercury, arsenic, and antimony, when the entire quantity of these metals present was from one two-hundredth to one five-hundredth of a milligramme.—*Boston Med. and Surg. Jour.*

Lime-water in Wasp Stings.—Dr. Dauverne (*L'Independente*, January, 1874) says that some years ago he was stung on the head and face by a number of wasps; the pain was great, and there were many punctures: "I had no ammonia at hand, and no druggist to run to. If it was the analogy of the suffering with that of the pain from a burn which made me think of lime-water, which I knew to be most efficacious in this case, I was most fortunate. Since that date I have advised, in some twenty cases, the use of lime-water in wasp stings, and have always obtained the immediate cessation of the pain. The facility of at once procuring this drug, by dissolving a few grains of quick-lime in water, recommends it in preference to any other drug."—*The Doctor.*

Poisoning by Cantharidal Collodion.—Dr. Ernst Schwerin, of Berlin, reports a case (*Berliner Klinische Wochenschrift*) of poisoning with cantharidal collodion. The patient, a woman aged twenty-three years, swallowed, through mistake, fifteen drops of the preparation. After about an hour had elapsed she was attacked with cramps in the lower part of the abdomen, for which, previously to sending for a physician, numerous household remedies were used. The doctor upon his arrival found the patient running about the room, with the arms crossed upon the abdomen, stopping after every few steps to void a few drops of urine, the passage of which was attended with intense pain. At times she fell into a species of catalepsy. The pulse was small and of moderate frequency. For some days albumen was found in the urine. Under treatment, she at the end of a few days was entirely recovered. It is interesting to notice that the sexual passion was not at all excited by the drug; and this goes to confirm the opinion of later observers, that the older physi-

cians were mistaken in attributing aphrodisiac qualities to it.—*Med. Times.*

Poisonous Doses of Chloral.—The smallest dose which has produced poisoning is 2½ scruples, while 460 grains have been taken without unpleasant consequences. The symptoms are diminished frequency of respiration, redness of the conjunctiva, contraction of the pupils, lividity of the lips, and falling of the jaw. The character of the pulse has not been found to be uniform. The treatment should consist in: 1. Removing the poisonous matter, or diluting it by water, tea, coffee or other fluids; and 2. Restoring respiration. Too much reliance must not be put upon so-called antidotes, such as strychnine, physostigmine, morphine, camphorated ether and ammonia. These remedies cannot always be trusted. Possibly transfusion of blood, which has been successful in cases of poisoning by chloroform, may also prove useful in these cases.—*Medicin. Chir. Rundschau.*

Poisoning by Nitrate of Silver.—As there are but two or three fatal cases of poisoning by nitrate of silver on record, we extract the following from the *Public Record*, of Philadelphia, for Dec. 3: "Dr. Edward Petzold, of New York, lately applied a piece of nitrate of silver, better known as lunar caustic, at the end of a quill, to the throat of Charles Sternall, a child, in a case of inflammation. The nitrate of silver slipped from the quill down the child's windpipe, and entered the stomach. Its fearful effects were immediately apparent. The child was in agony, and died after the coatings of the stomach had been completely burned away."—*London Medical Record.*

Alcoholic Drinks in England and Ireland.—Very few individuals would be ready to believe that the Irish people spend but half as much money, man for man, for intoxicating liquors, as the people of England. Yet such appears to be the fact. At the meeting of the Social Science Congress, Mr. Hoyle presented a carefully prepared table showing the liquor returns, the death rate and the pauper rate of the two countries for a period of five years. He adds: "The population of England squander in intoxicating liquors twice as much per head as the people of Ireland. As a result, they have had, for the last five years, a mortality of 22.2 in the 1,000 living each year, while Ireland has only had 16.7 deaths in each 1,000 of her population. And, more remarkable still, England has 46.35 in the 1,000 of her people supported on the poor-rate, paid by the industrious, the thrifty, and the sober. Ireland has but 13.3 in the 1,000 of her population paupers.

Extensive Poisoning by Arsenite of Soda.—The London *Chemist and Druggist* gives an account of a singular case of wholesale poisoning at Blackburn, England. At a coroner's inquest, held on account of the sudden death of a child three years old, it was proved that on the previous Wednesday a quantity of ashes had been carted from the extensive manufactory of Messrs. Jackson Brothers, George Street West. With these ashes there had been intermingled a quantity of arsenical soda, which had been supplied to the Messrs. Jackson for manufacturing purposes. The deceased and twenty-nine others had picked up the soda in question, under the impression, from its crystallized appearance, that it was alum, and had sucked it. The deceased died from its effects, and all the others had been attacked with sudden illness, but only one other case proved to be fatal.—*Boston Journal of Chemistry.*

Note on the Detection of Digitaline and Atropia.—In the process of Stas Otto for the detection of alkaloidal poisons, the digitaline which may be present is taken up chiefly by the ether in the first washing of the acid fluid, and remains as a resinous substance on evaporating this solution. The smaller portion, which is taken up by ether from the alkaline fluid, is easily confounded with delphinia and aconitia, since it gives the same reaction as these alkaloids with the phosphoric acid test. Petenkofer's test, however, serves to distinguish them. On adding sulphuric acid to a dilute solution of dried bile containing a trace of digitaline, a splendid red color is produced as soon as the temperature reaches 70°. Twelve minims of a decoction of fox-glove leaves, made in the proportion of about one grain to the ounce, gave the reaction quite distinctly. Other glucosides, of course, give the same reaction, but the test may nevertheless have its value when taken in connection with other evidences of the presence of this poison.

The most characteristic tests for atropia are the dilatation of the pupil, and the aromatic smell produced by adding this alkaloid and a little water to a hot mixture of sulphuric acid and potassium dichromate. This odor is developed better by placing the atropia on a few crystals of chromic acid, in a porcelain dish, and applying a gentle heat until the chromic acid assumes a green color.—*H. Brunner in Phar. Jour.*

Examination of the Blood-Globules in Lead-Poisoning.—M. Malassez made known to the French Biological Society (December 6, 1873) his conclusions relative to the alterations which take place both in the number and in the size of the red blood-globules, and reported his observations on eleven cases of lead-poisoning.

The normal mean number of red globules, 4,500,000 per cubic mil-

limetre of blood, is reduced to 3,700,000, or to 3,200,000 during the presence of the acute symptoms.

The deficiency in the number of globules is more or less marked, according as the workmen are in a greater or less degree exposed to the lead-dust while practising their trade. In those poisoned the red globules are not only less in number, but they are also increased in size: they present in fact a diameter of the nine or ten thousandth part of a millimetre, seven or eight being the normal average. This increase in the dimensions of each globule is not compensated by the diminution in the number, and renders the circulation difficult in the fine capillaries.

M. Bouchard has estimated the *urochrome* of the urine of those poisoned by lead, and has proved that this coloring-matter is increased in quantity when the acute manifestations, arthritis, colic, and head-symptoms, are present. There must be, therefore, considerable activity in the destruction of the red globules during the acute period of the disease, which shows that hæmatic icterus comes on when the kidneys are not able to eliminate the *urochrome* resulting from this destruction.—*Le Mouvement Médical.—The Med. Times.*

Memorandum of the Effects of Carbolic Acid in a Large Dose.—Dr. S. J. Radcliffe, of Washington, D. C., writes the following to the *Philadelphia Medical Times:*—General H., a retired officer of the army, had been suffering from an attack of chronic articular rheumatism. On the 27th of November I prescribed for him an effervescing saline draught, consisting of eight ounces of a carbonated solution, and an acid solution containing one ounce of citric acid and eight ounces of water,—half an ounce of each to be taken while effervescing.

I visited him on the morning of the 28th, and found him sitting on the bed, a vessel at the bedside one-third filled with matter, probably about a pint, seemingly from the stomach, mixed with blood. On inquiring what was the matter, he replied he had been vomiting, and his nose had been bleeding. He said he had taken, a little while before my visit, the first dose of the medicine prescribed, and it did not effervesce as I had said it would, but made him very sick, and he threw it up with the contents of his stomach, and his nose bled quite freely immediately after. On tasting the mixture in the vial containing the acid solution, I at once recognized the flavor, and informed the general that he had taken a pretty good dose of carbolic acid, the odor of which he then for the first time remembered. I took the vial containing the acid solution to the drug-store, and the drug-clerk admitted confusedly, after seeing the prescription again, that he had made the

mistake and put an ounce of fluid carbolic acid in eight ounces of water instead of an ounce of citric acid. There was about half a drachm of the acid in each dose, the quantity the patient took. Fortunately for him, he took it on a full stomach, after breakfast, or it would doubtless have produced disastrous results. As it was, he experienced no other effects than nausea, epistaxis, some drowsiness, and a bad taste in the mouth during the day.

Case of Poisoning by Coal-Gas (*The Lancet*, October 25, 1873).—Dr. F. De Chaumont recently had the opportunity of making post-mortem examinations on the bodies of two persons who died from the effects of breathing an atmosphere saturated with coal-gas. He found extensive ecchymoses of a bright-red color on the dependent parts of the back, arms, and legs; the dura mater on its external surface was much congested; the arachnoid was opaque; the pia mater bright red and injected; cerebral substance bright red, with numerous bloody points in it; a small quantity of serum in the spinal canal; right auricle full of coagulated blood; blood generally fluid; trachea highly congested, containing a moderate quantity of mucus; lungs not much collapsed; aorta closed and crepitant; bronchial membrane greatly congested; bloody, frothy matter issuing in large quantities from the tubes. Remaining organs healthy.

Poisoning by the Acid Pernitrate of Mercury (*The Lancet*, January 3, 1874).—H. Stanley Gale reports a case of lupus of the cheek with red and soft but non-ulcerating tubercles, in which the pernitrate of mercury was applied over a space not larger than a florin. The pain caused was excessively acute. In about ten hours there came on a sudden, profuse vomiting of yellowish matter, together with griping and purging, the motions being streaked with blood. There were also cold sweats, with a sense of constriction about the pharynx. The pulse was small, and only 56. The vomiting was increased even by the use of ice, and came on every five or ten minutes for three hours, after which there was a tendency to sleep, and the symptoms gradually diminished in severity. The patient was a strong, healthy man, in the prime of life.

A New Symptom of Bromism.—Dr. Hayden records green vision as having been caused by bromide of potassium in a case under his care.—*Irish Hospital Gazette*, February 2, 1874.

GENERAL RECEIPTS.

Snuff for Facial Neuralgia.

Dr. Scriffigano recommends:

℞. Quin. citrat..... ʒ j.
Strong tobacco-snuff.... ʒ iss.

Sig. To be used, as required, in neuralgia.

Remedy for Chronic Hoarseness.

In chronic hoarseness arising from thickening of the vocal cords and adjacent membrane, the ammoniated tincture of guaiacum is often a very efficacious remedy. It may be appropriately mixed with equal parts of the syrup of senega, and a teaspoonful of the mixture given two or three times a day.—*Am. Practitioner.*

Formula for Intertrigo.

The following is a favorite with M. Legal in the treatment of intertrigo and eruptions, produced by repeated scratching:

℞. Subnitrate of bismuth,
Glycerine..... ää 8 grms.
Tincture of cochineal, 20 drps.
M.

The latter is added merely for the sake of its color.

A Domestic Remedy for Dropsy.

℞. Fresh mullen leaves. ʒ ij.
Fresh cedar leaves.. ʒ ij.
Nitrate of potash... ʒ ij.
Holland gin..... Oj.

Dose: a tablespoonful three times daily, half an hour after eating. (The leaves are to be cut fine.)

A Good Liniment.

℞. Oil of origanum,
Oil of wormwood,
Gum camphor....ää ʒ ss.
Oil of sassafras..... ʒ ij.
Oil of turpentine... ʒ ij.
Alcohol (95 per cent) Oj.

Mix, and apply with the hand thoroughly, every three hours.

For neuralgia add chloroform and tincture of opium in sufficient quantity; for rheumatism add liquid ammonia.

Liniment for Burns.

℞. Yellow wax, melted and strained..... ʒ j.
Linseed oil, raw.... ʒ iij.
Tannin..... j.
Subnitrate of bismuth..... ℈ j.

Heat the wax in a clean tin vessel, add the oil and stir till they are thoroughly incorporated, then remove from the fire and stir till cold, adding first the tannin and lastly the bismuth. Apply on bits of patent lint to the surface of the burn, previously carefully cleansed.

Formula for Coryza.

℞. Pulv. cubeb..... ʒ ij.
Pulv. cupri sulph... gr. ij.—M.

Snuff up a small pinch about every two hours till relieved.—Thomas Barrows, M.D., in *Medical and Surgical Reporter.*

Cacao Cream.

The following formula is given by Mr. T. S. Glenn, of St. Louis, in *The American Journal of Pharmacy:*

℞. Oleum throbromæ..... ℥ xvi.
" ricini ..... ℥ xcvi.
" bergamii..... ʒ vi.
" limonis..... ℥ ioō.
" citronellæ ..... ʒ ioō.
" lavendulæ..... ʒ iv.

Spts. coloniensis, 95 per ct. fxiv. [?]

Melt the oil of throbromæ, warm the castor-oil, and mix. Dissolve the essential oils in the cologne spirit. Fill the bottles two-thirds full with the first mixture, and the balance with the perfumed spirit.

This forms an elegant mixture for dressing the hair, and is quite popular with many. In very cold weather it becomes quite hard, but a little heat soon renders it fluid.

Pills of Sulphate of Quinia.

Mr. C. C. Patterson, of St. Clairsville, Ohio, in a communication to the editor of *The American Journal of Pharmacy*, suggests that these pills may be made of small size, and without any gum, syrup, or extract, by adding to the quinia a little tartaric acid and sufficient water. This is a modification of the plan published by Professor Parrish in that journal in 1853, and which consists in adding aromatic sulphuric acid to the quinia and rolling the mass before it hardens, which takes place rather suddenly, and may be retarded, particularly when operating upon a larger quantity, by the addition of a very small quantity of honey or simple syrup.

Quinine pills may be made very small by the use of syrup alone, or molasses. It requires a very small quantity of syrup. If the quantity of syrup be not too much no other ingredient is necessary.

M. Berquier, of Provins, in the *Repertoire de Pharmacie*, suggests the following formula for a quinine pill mass:

℞. Sulphate of quinine...30 grains.
Powdered gum..... 5 "
Glycerine..... 10 "

Mix the gum with the glycerine and then incorporate the quinine, beating it well in a mortar.

This is said to give a mass of good pillular consistence, which retains its softness, and can be easily rolled into pills. It can be readily worked up with other ingredients, and is not bulky. Three grains of this mass are equal to two grains of sulphate of quinine.

Emulsion of Cod-Liver Oil.

℞. Ol. morrhuæ.....f ℥ viij.
Tragacanth..... ʒ i.
Sacchar. alb..... ʒ iv.
Ol. gaultheriæ.....gtt. lx.
" sassafras.....gtt. l.
" amygd. amar.....gtt. x.
Aquæ.....f ℥ viij.

The tragacanth and sugar are to be dissolved in the water, and the mucilage strained. In this are to be incorporated first the essential oils and then the cod-liver oil. This makes an elegant-looking emulsion, not too thick, containing fifty per cent. of the oil, and of a rather pleasant taste and smell.—William M. Rice, Jr., in *The American Journal of Pharmacy.*

According to the *Courier Méd.*, the following formula is employed in Germany, viz.:

Powdered gum arabic.	68 grammes.
Distilled water.....	60 "
Syrup of lacto-phosphate of iron.....180	"
Clear cod-liver oil....250	"
Essence of bitter almonds.....	6 drops.

The following has been used at Charenton by Dr. Josias, viz.:

Clear oil of cod-liver..100	grammes.
Powdered gum arabic. 50	"
Water of cherry laurel. 20	"
Orange flower water.. 20	"
Simple Syrup.....200	"
Calcined Magnesia... 4	"

M.

—*The Doctor.*

Taraxacin.

Leontodon is a valuable remedy in all diseases of the digestive and hepatic

systems. Its action is cholagogue and tonic. The following is an excellent formula for its administration. ℞. Leontodon; hydrastin aa, grs. xxx; ext. nux vomica, grs. viij. M. Ft. pill. No. xx. One thrice daily. Valuable in dyspepsia and constipation. Dose of the remedy, two or three grains.—*Eclectic Med. Journal.*

Formula for Unguentum Althææ, or Marshmallow Ointment.

℞. Lard, 1 pound; curcuma, 2 drachms; water, 4 drachms; yellow wax, burgundy pitch, of each, 6 drachms. Boil the lard, curcuma, and water together, until all the moisture has disappeared; then add the wax and pitch, strain while hot, and stir while cooling.—*Prussian Pharmacopœia.*

Styptic Collodion.

The following will be found a most useful formula:

Tannin..... 2 oz.;
Alcohol..... 4 fl. oz.;
Ether.....12 fl. oz.;
Soluble cotton..... 1 drm., 2 scr.;
Canada Balsam .....1 drachm.

Dissolve the tannin in one part of the alcohol, and the ether with the Canada balsam; then add the cotton.—*Dublin Medical Press and Circular.*

New Antiseptic Ointment.

Professor Lister is at present using in the Edinburgh Royal Infirmary a new ointment with, we hear, great success. It has the following composition:—paraffin, 2 parts; white wax, 1 part; sweet oil of almonds, 2 parts; boracic acid (powdered), 1 part.—*Student's Jour. and Hosp. Gaz.*

Phosphorus Mixture.

A very pleasant preparation in the fluid form is the following: Dissolve a grain of phosphorus in six drachms of chloroform, and add two ounces of good glycerin, and shake well. The glycerin forms a permanent union with chloroform which dilution with water does not separate. Dose, a teaspoonful three times a day.

Administration of Podophyllin.

Mr. A. E. Barrett (*British Medical Journal*, Oct. 18) recommends the following formula when it is necessary to give podophyllin:—

℞. Podophyllin ..... gr. ivss.
Extracti elaterii..... gr. ivss.
Pulv. jalapæ comp..... ʒ vj.—M.

Half a drachm of this powder in half a pint of warm water acts most effectually, the cholagogue effects of the podophyllin seeming to be assisted by the hydragogue. Its use is not apt to be followed by constipation.—*London Medical Record.*

Vehicle for the Administration of Chloroform.

A French medical Journal remarks that the best course is to dissolve the chloroform in glycerine (1 : 3), which is effected with tolerable facility, and gives a very clear solution, pleasant to the taste, and with a strong odor of chloroform. This solution can be mixed in all proportions with water without the occurrence of any precipitation, though the odor is distinctly perceptible. In forming the mixture, it is well to add the chloroform slowly and to mingle the two thoroughly. It should be left at rest for twenty-four hours; at the expiration of this period a portion of the chloroform will be found to have collected at the bottom of the vase; this should be separated and mixed with an additional part of glycerin, when no further separation will occur. This mixture may be kept for some time without any loss of chloroform by evaporation.—*Boston Journal of Chemistry.*

New Process for Tar Water.

L. Pommier prepares a concentrated tar water by macerating in a covered

vessel for eight days a mixture consisting of ten parts each of Norwegian tar and ammonia water, and of one hundred parts of water; the mixture is then boiled to expel the excess of ammonia, then cooled and filtered. Thus prepared, it has a mild alkaline reaction with litmus, and may be diluted as required.—*L'Union Pharm., in Am. Jour. Pharm.*

Formula for Effervescing Carbonate of Iron:

℞. Ferri sulph ..... ℥ x.
Acid. citric..... ℥ ij.
Acid. tartaric..... ℥ iij.
Sodæ bicarb..... ℥ v.
Pulv. sacch. alb .... ℥ ij.

Powder each of the ingredients finely, and let them be thoroughly dried. Mix the sulphate of iron with the sugar, then add the acids and soda. Pass the mixture through a fine sieve, and then heat it in a metal vessel over a water bath, and stir assiduously till it granulates.

Lea and Perrin's Worcester Sauce.

White vinegar.....	15 gallons
Walnut catsup.....	10 "
Madeira wine.....	5 "
Mushroom catsup.....	10 "
Table salt.....	25 pounds
Canton soy.....	4 gallons
Allspice (powdered)	
Coriander " of each..	1 pound
Mace	
Cinnamon.....	¼ pound
Assafœtida.....	¼ pound dissolved in
Brandy	1 gallon.

Boil twenty pounds of hogs' liver for twelve hours with ten gallons water, renewing the water from time to time. Take out the liver, chop it, mix with water, and work through a sieve; mix with the sauce.—*The Druggist's Circular.*

Aromatic Mixture.

The following formula is from the collection recently published for use in the Philadelphia Hospital, and affords a pleasant vehicle for administrating nauseous remedies:

Sem. coriand.....	℥ ij
Sem. angelicæ.....	℥ ijss.
Sps. vini deod.....	f ℥ xij
Aquæ.....	f ℥ x
Glycerinæ.....	f ℥ v
Syrupi.....	f ℥ vj

Percolate two pints.—*London Medical Record.*

Camphor Ice with Glycerine.

℞. Spermaceti.....	℥ vi.
White wax.....	℥ iv.
Oil of sweet almonds..	℥ xxxii.
Camphor.....	℥ v.
Borax.....	℥ ii.

Melt the spermaceti and wax, add the oil and then the camphor, and when dissolved add the glycerine mixed with four oz. of rose water; having dissolved the borax in the rose water, stir until nearly cold and pour into moulds.—*Druggist's Circular.*

Chloroform Paregoric.

Take of—

Chloroform.....1½	fluid ounces,
Tincture of opium 1½	" "
Tincture of camphor...1½	" "
Aromatic spirits of ammonia 1½	" "
Oil of cinnamon.....20	minims.
Brandy.....2	fluid ounces.

Dose, half a fluid drachm, or less, in spasmodic affections of the stomach, cholera, etc.—*Parrish.*

An Elixir of Pancreation.

The following formula is recommended by Mr. R. V. Mattison:—

℞. Pancreas .....No.	vj.
Acid hydrochlor.....f ℥	iv.
Glycerin.....q.	s.
Aquæ.....Cong.	iss.

Macerate the dissected pancreas for three days in the mixture of water and acid with Oiiss of glycerin added; then separate the liquid, strain and add f ℥ iss

oil of orange and a sufficient quantity of glycerine to make the liquid measure Cong. iiss; this is then filtered until perfectly transparent. The result is a sweet acidulous elixir, one fluidrachm of which will easily emulsify half a fluid-ounce of cod-liver oil—a valuable edition to the number of preparations combining efficiency with pharmaceutical elegance.

Carbolic Acid for Diarrhœa in Children.

The Courrier Médical publishes the formula of a carbolized mixture which Dr. Smith, of Moscow, has used with good results, a teaspoonful having been given every two hours to a child eight months old.

℞. Carbolic acid,
Spirits of wine.....āā 15 centigr.,
Peppermint-water.....20 grm.,
Tincture of opium.....2 drops,
Mucilage of gum.
Syrup of poppies...āā 10 grammes.

Milk is absolutely unallowable during the use of the medicine. Mucilaginous drinks in small quantities and at regular intervals may be given.—*Ob. Jour. of Gr. Br. and Ir.*

Test for Genuine Mushroom Ketchup.

Boil a little, and with genuine ketchup a large quantity of ammonia is evolved. Spurious ketchup does not give off any ammonia.

BIBLIOGRAPHY.

A Treatise on Therapeutics, comprising Materia Medica and Toxicology, with Especial Reference to the Application of the Physiological Action of Drugs and Clinical Medicine. By H. C. Wood, Jr., M.D., Professor of Botany, etc., etc. Philadelphia: J. B. Lippincott & Co. 1874. pp. 571.

This book supplies, as far as it is now possible to do so, a want for some time felt in our profession, and which can be described no better than by the words of the author. "In the early portion of this preface I stated that the work had grown out of a need felt by myself: that need was for a book into which should be gathered the many scattered facts in regard to the physiological action of medicine,—a book in which an attempt should be made to sift the true from the false, to reconcile seeming differences, to point out what we know and what we do not know, and to give a platform from which investigators might start forward without the necessity of being, as is so often the case, ignorant of what was already achieved, or of spending a good deal of time in a wild hunt through the almost boundless, but often scattered and inaccessible, ranges of continental literature." Professor Wood's qualifications for the task are fully proven by the work in question, and we have the pleasure of congratulating the profession upon the possession of a work on therapeutics which is not only fresh as regards the style in which it is written, and original, as a text-book, in the mode of considering the action of remedies, but is composed mainly of new material. The criticism applied to so many of our text-books on therapeutics, that they are little more than a rehash of the ones which have preceded them, is certainly, so far as we have been able to judge, inapplicable to this one.

A Universal Formulary: containing the methods of preparing and administering officinal and other medicines. By Egleseld Griffith, M.D. Third edition, carefully revised and much enlarged, by John M. Maisch, Phar. D. Philadelphia: Henry C. Lea. 1874, pp. 779.

With the present system of medical teaching there is, without doubt, much greater attention paid to the science than to the art of medicine; and the student is, as a rule, less capable of making a good use of his knowledge than he was in the days when the most of his instruction was obtained in the office and private practice of a preceptor. In no respect is this more marked than in the art of combining remedies so as to increase their effects and at the same time exhibit them in the most agreeable form. At the present day it is too much the fashion to consider this the province of the pharmacist; and there is some reason to think that before long we shall have consulting therapeutists, whose duty it will be to prescribe for the patient after the regular attendant has satisfied himself with regard to the diagnosis of the affection. As an aid to those who desire to do their own prescribing, this work will be found very valuable; for, besides extemporaneous prescriptions which may form a groundwork for compounds adapted to individual wants, the book contains an immense amount of information relating to officinal preparations belonging to the various pharmacopœias. It contains, also, numerous tables of weights, meas-

ures, and doses; rules for the administration of medicines, dietetic preparations, directions for the care of the sick, and a chapter on poisons and their antidotes. The present edition contains something over one hundred pages more of text than the preceding one.

MEDICAL LEXICON. A DICTIONARY OF MEDICAL SCIENCE, etc.; with the accentuation and etymology of the terms, and the French and other synonyms. By ROBLEY DUNGLISON, M.D., LL.D., etc. A new edition, enlarged and thoroughly revised, by RICHARD J. DUNGLISON, M.D. Philadelphia: Henry C. Lea. 1874.

WE presume that there are few physicians in our country who have not had frequent occasions to appreciate the value of some one of the former editions of this noble work. With all its faults, which we are glad to say were rather those of omission than of commission, we have had no work like it in our language. In a science of so rapid growth as that of medicine it is well-nigh impossible to keep a lexicon up with the growth in phraseology, and the necessity for a revision in the last edition is shown by the introduction of over *six thousand* subjects and terms not embraced in the last, and matter equivalent to one hundred and sixty pages of the last edition have been added. With the changes in typography and size of page the work now embraces 1,131 pages.

The revision has been fitly conducted by Dr. Richard Dunglison, who participated with his father in the preparation of former editions, and who, therefore, possessed a valuable experience to aid him in the preparation of the present volume. We feel that the character of the work needs at the present day, and after what we have said, no further commendation.

A CLINICAL HISTORY OF THE MEDICAL AND SURGICAL DISEASES OF WOMEN. By ROBERT BARNES, M.D., LONDON, etc. Philadelphia: Henry C. Lea. 1874.

After the very favorable impression created by the work on "Obstetrical Operations," which has made Dr. Barnes well known as an author to most of our profession, it has been no small venture for him to undertake a work of such magnitude on a subject which has been already so ably handled by contemporaneous European and American writers. We can, however, safely promise those who buy this book, with pleasant anticipations founded upon their knowledge of his former work, that they will in no wise be disappointed. Certain features,—such, for example, as the chapter on the anatomy of the generative organs,—give it, to some extent, the character of a treatise; but its clinical nature is well sustained in the remainder of the work. The judgment which has been used in the selection of the cases, and the practical character of the comments, will render the book of greater value to the practitioner than a pure treatise would be. A notable feature is the originality of nearly all of the illustrations,—a large proportion of them representing specimens belonging to various hospital museums. The indices to authorities and subjects are very complete.

THE STUDENT'S GUIDE TO SURGICAL ANATOMY:—being a description of the most important surgical regions of the human body, and intended as an introduction to operative surgery. By EDWARD BELLAMY, F.R.C.S., etc. Philadelphia: Henry C. Lea. 1874.

The present method of teaching anatomy by regions rather than by systems, as in the old plan, makes a book like this of great value to the student. Considered in this manner, the subject is presented in its most practical form, and less is required in the way of sheer memorizing than when bones, muscles, blood-vessels, and

nerves are considered by themselves, and the student is left to acquire his knowledge of the relations of organs by study in the dissecting-room.

The present work succeeds very well in supplying this information. Dr. Bellamy's experience as a teacher has served to indicate to him the needs of the student-class; and he has displayed good judgment in the selection and arrangement of his material, so as to impress the important points and avoid confusion. Fifty illustrations are given, for many of which the drawings were original. The clear and large type, the leaded lines, and the conveniet size of the book (300 pages), adapt it especially to the uses of students.

FORMULAS FOR ELIXIRS. Adopted by the American Pharmaceutical Association at its twenty-first annual meeting, and recommended to be used by physicians and pharmacists. Philadelphia: Sherman & Co., printers.

MISSOURI CLINICAL RECORD—A monthly journal of medicine and surgery. Vol. I., No. 1. Terms, $3.00, in advance. Editor, W. A. HARDWAY, M.D., etc. Associate editors, ALEXANDER B. SHAW, M.D., and CHARLES A. TODD, M.D. St. Louis: Missouri Medical College Library Association. 1874.

This journal of sixteen pages is gotten up in the general style of our confrère, *The Medical Record*, and is the organ of the above-named association; being supplied without extra expense to its members. Both the association and the journal have our best wishes for their prosperity.

THE INDUCTION OF SLEEP, AND INSENSIBILITY TO PAIN BY THE SELF-ADMINISTRATION OF ANÆSTHETICS. By JOHN M. CROMBIE, M.D., etc. London: J. & A. Churchill. 1873.

This pamphlet, of about forty pages, is devoted to the description and arguments for the use of an instrument invented by the author, which admits of the inhalation of vapor of chloroform by a patient so long as consciousness permits him to make voluntary compressions of the elastic ball, whereby the anæsthetic is forced into an inhaler. The major portion of the work is occupied by an argument in favor of thus placing the use of so powerful an agent within the voluntary control of one who, for the time being, may be irresponsible. When we consider the abuse to which such an agent may be, and frequently is, put, together with the fact that many cases of death by chloroform occur in persons who have not reached the condition of anæsthesia, we may be justified in saying that we think Dr. Crombie would have done himself more credit if he had turned his inventive talent in some other channel.